DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

Contracts Branch
Contracting Division

SUBJECT: Central Contractor Registration

TO ALL PROSPECTIVE CONTRACTORS:

Please be advised that it is now required to register with the CCR (Central Contractor Registration) in order to perform work for the Federal Government. For additional information, please refer to the instruction sheet on the back of this letter, which includes the appropriate websites and telephone numbers.

Sincerely,

Ella D. Snell
Contracting Officer

CENTRAL CONTRACTOR REGISTRATION

HTTP://WWW.ACQ.OSD.MIL/EC

1(800) 334-3414

The Central Contractor Registry (CCR) is the Government's new national storing house of commercial and financial information on current and would-be contractors.

CCR eliminates the requirement for current and future contractors to submit Standard Form 129 and provides a single location for registering to conduct business with the Federal Government. Access to the register is available via the World Wide Web. A registration workbook is available for downloading from this site. It is highly recommended you review it prior to processing CCR to ensure all required information is available. Contractors are required to have a DUNS (Data Universal Numbering System) assigned by Dunn & Bradstreet at no charge (call 1-800-333-0505).

The initial Web Site application capability is for the initial contractor registration only. The ability to change, update or cancel a registration and query contractor information via the Web is currently in effect. After submitting a registration, contractors may use the Web application to inquire as to the status of their registration. Typically, a registration will be activated within 48 hours after receiving a complete and accurate application via the Internet. To register via the Internet, go to *http://ccr.edi.disa.mil*. Registration of an applicant through fax or mail may take up to 30 days. The mailing addresses are as follows: For firms with Legal business names beginning with the letters A-K or a number use CCR Registration Assistance Center, 2000 South Loop 256, Suite 11, Palestine, Texas 75801, FAX NO: (903) 729-7988. For firms with Legal business names beginning with the letters L-Z or a number use CCR Registration Assistance Center, 1450 Scalp Avenue, Johnstown, PA. 15904 FAX NO: (814) 262-2326. For those Contractor's who chose to register by mail, a paper registration form can be used and sent or faxed to the appropriate above address who will also furnish the form. Once successfully registered in CCR, a notice will be sent via email, fax, or regular post with information that a Trading Partner Identification Number (TPIN) will soon follow. For CCR implementation and contract questions please contact Robert Cooper at (703) 681-7573.

Anyone may access CCR via the Web to inquire whether vendor is registered at the following site: *http://ccr.edi.disa.mil*.

Information or assistance is available from your local Electronic Commerce Resources Center or Electronic Commerce Information Center at 1-800-334-3414 (8am-8pm), Monday-Friday, except Federal Holidays.

Additionally, your local Procurement Technical Assistance Center (PTAC) employs highly skilled professionals to help businesses like ours earn Federal and State Government contracts; assist with your CCR enrollment. The PTAC can provide Government specifications, daily listings of bid opportunities, bid history and contract award results, training and assistance with Electronic Data Exchange (EDI).

To find the office nearest you, the national PTAC directory can be accessed at Website *http://www.fedmarket.com/tecassis.html*.

US Army Corps
of Engineers®
NEW YORK DISTRICT

Marist College Hudson River Waterfront Bulkhead Project

Poughkeepsie, New York

Specifications

IFB No. DACW51-03-B-0008

US ARMY ENGINEER DISTRICT, NEW YORK

INVITATION FOR BID NO. DACW51-03-B-0008

CHECK LIST FOR BIDDERS

ATTACHED IS IFB NO. DACW51-03-B-0008
Marist College Hudson River Waterfront Bulkhead Project, Poughkeepsie, New York

ALL INFORMATION REQUIRED BY THE TERMS OF THIS SOLICITATION MUST BE FURNISHED. MISTAKES OR OMISSIONS MAY RENDER YOUR BID INELIGIBLE FOR AWARD. IMPORTANT ITEMS FOR YOU TO CHECK ARE INCLUDED IN BUT NOT LIMITED TO THOSE LISTED BELOW. THIS INFORMATION IS FURNISHED ONLY TO ASSIST YOU IN SUBMITTING A PROPER BID.

__HAVE YOU ACKNOWLEDGED ALL AMENDMENTS?

__HAVE YOU COMPLETED THE "REPRESENTATIONS AND CERTIFICATIONS" (SECTION 00600) PORTION OF THE SOLICITATION?

__IS YOUR DUNS NUMBER LISTED ON THE STANDARD FORM 1442?

__IS YOUR BID PROPERLY SIGNED?

__A BID BOND IS REQUIRED. HAS YOUR SURETY PROVIDED YOU WITH A BID BOND ON STANDARD FORM 24 OR A SIMILAR FORM CONTAINING THE SAME LANGUAGE AS A STANDARD FORM 24?

__IS YOUR BID GUARANTEE IN THE PROPER AMOUNT?

__IS YOUR BID GUARANTEE PROPERLY SIGNED BY BOTH THE BIDDER AND SURETY AND ARE ALL REQUIRED SEALS AFFIXED?

__ DO THE BID BOND AND ACCOMPANYING DOCUMENTS BEAR SIGNATURES AND SEALS AFFIXED **AFTER** THE DOCUMENT WAS GENERATED, AS OPPOSED TO COMPUTER PRINTER-GENERATED SIGNATURES AND/OR SEALS?

__IS THE NAME IN WHICH YOU SUBMITTED THE BID THE SAME ON YOUR BID AS ON THE BID BOND?

__IS YOUR BID BOND INCLUDED WITH YOUR BID? (A LATE BID GUARANTEE IS TREATED THE SAME AS A LATE BID)

__HAVE YOU ENSURED THAT YOU HAVE NOT RESTRICTED YOUR BID BY ALTERING THE PROVISIONS OF THE SOLICITATION?

__WHEN REQUIRED, HAVE YOU ENTERED A UNIT PRICE FOR EACH BID ITEM? (THE SOLICITATION SPECIFICALLY STATES WHEN THIS IS NECESSARY.)

__ARE DECIMALS IN YOUR PRICES IN THE PROPER PLACE? ARE YOUR FIGURES LEGIBLE?

__IF YOU HAVE MADE ERASURES OR CORRECTIONS ON YOUR BID, ARE THEY INITIALED BY THE PERSON SIGNING THE BID?

__DOES THE ENVELOPE CONTAINING YOUR BID PROPERLY IDENTIFY THAT IT ISA SEALED BID AND DOES IT CONTAIN THE CORRECT SOLICITATION NUMBER AND BID OPENING TIME?

__WILL YOUR BID ARRIVE ON TIME? (SEE PARAGRAPH ENTITLED “LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS” IN THE INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS, SECTION 00100 OF THE SOLICITATION.)

NOTE: THERE ARE INCREASED SECURITY MEASURES AT JACOB K. JAVITS FEDERAL BUILDING, 26 FEDERAL PLAZA THAT MAY AFFECT THE TIME IT TAKES TO ENTER THE BUILDING. BIDDERS IS RESPONSIBLE TO ENSURE THAT ITS BID IS SUBMITTED TIMELY.

IFB No. DACW51-03-B-0008

NEW YORK DISTRICT
CORPS OF ENGINEERS
NEW YORK, NEW YORK 10278-0090

INVITATION FOR BIDS
FOR
Marist College Hudson River
Waterfront Bulkhead Project
Poughkeepsie, New York

1. Attached is INVITATION FOR BIDS (IFB) NO. DACW51-03-B-0008.
2. BIDS MUST BE SET FORTH full, accurate, and complete information as required by this Invitation for Bids, including attachments. The penalty for making false statements in bids is prescribed under Title 18, United States Code, Section 1001.

3. SUBMISSION OF BIDS: Complete details concerning proper submission of bids are contained in the INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS (Section 00100).

4. Note the REQUIREMENT FOR AFFIRMATIVE ACTION of the EQUAL OPPORTUNITY clause as it applies to the contract resulting from this solicitation. (See paragraph NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY in Section 00100 of this IFB).

5. REPRESENTATIONS AND CERTIFICATIONS – SECTION 00600
   Bidders and Offerors are required to complete the REPRESENTATIONS AND CERTIFICATIONS and submit them with their bids.

   Within Section 00600, note in particular the CERTIFICATION OF NONSEGREGATED FACILITIES. Failure of a bidder or offeror to agree to the certification will render his bid or offer non-responsive to the terms of solicitations involving awards of contracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity Clause (1984 APR).

6. THIS PROJECT IS A CIVIL WORKS PROCUREMENT AND IS NOT FUNDED BY THE DEPARTMENT OF DEFENSE.

MAIN TABLE OF CONTENTS

Marist College Hudson River Waterfront Bulkhead Project,

Poughkeepsie, Duchess County, New York

SECTION	TITLE	NO. OF PAGES
CONTRACT REQUIREMENTS		
00010	SF 1442 AND BIDDING SCHEDULE	
00100	INSTRUCTIONS, CONDITIONS, AND NOTICE TO BIDDERS	
00600	REPRESENTATIONS AND CERTIFICATIONS	
00700	CONTRACT CLAUSES	
00800	SPECIAL CONTRACT CLAUSES	11
00900	WAGE RATES	25
00901	PERMITS	4
00902	INSURANCE CLAUSE	3
TECHNICAL PROVISIONS		
01110N	SUMMARY OF WORK	
01311	PROJECT SCHEDULE: BAR CHART	2
01312	RESIDENT MANAGAMENT SYSTEM	4
01330	SUBMITTAL PROCEDURES	22
01335A	ENVIRONMENTAL PROTECTION	6
01420	SAFETY	4
01451A	CONTRACTOR QUALITY CONTROL	6
01453	CONTRACTOR WARRANTY MANAGEMENT	2
02210A	SUBSURFACE DRILLING, SAMPLING, AND TESTING	6
02230	CLEARING AND GRUBBING, DEMOLITION AND OFF SITE DISPOSAL	2
02300A	EARTHWORK	4
02371A	WIRE MESH GABIONS	6

02378A	GEOTEXTILES USED AS FILTERS	3
02381	RIPRAP	4
02455A	DRILLED FOUNDATION CAISSONS (PIERS), AND CAST-IN-PLACE CONCRETE FILLED PILES, STEEL CASINGS	6
02464A	METAL SHEET PILING	4
03307A	CONCRETE FOR MINOR STRUCTURES	6
05055A	MISCELLANEOUS STEEL	7
06100A	ROUGH CARPENTRY	3
09805	SHEET PILE AND CAISSON COATING	2
13110A	CATHODIC PROTECTION BY GALVANIC ANODES	2

SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NO. DACW51-03-B-0008	2. TYPE OF SOLICITATION [X] SEALED BID (IFB) [ ] NEGOTIATED *(RFP)*	3. DATE ISSUED 28-Apr-2003	PAGE OF PAGES 1 OF 73

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. W16ROE-2357-0867	6. PROJECT NO.

7. ISSUED BY CODE DACW51	8. ADDRESS OFFER TO *(If Other Than Item 7)* CODE
USA ENGINEER DISTRICT, NEW YORK ATTN: CENAN-CT ROOM 1843 26 FEDERAL PLAZA (DACW51) NEW YORK NY 10278-0090 TEL: FAX: (212)264-3013	**See Item 7** TEL: FAX:

9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. *(Include area code)* *(NO COLLECT CALLS)*
	SCOTT M HELMER	212-264-9118

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS *(Title, identifying no., date):*

THE CONSTRUCTION OF MARIST COLLEGE HUDSON RIVER WATERFRONT BULKHEAD PROJECT, POUGHKEEPSIE, DUTCHESS COUNTY, NY.

THIS PROJECT IS UNRESTRICTED.
NAICS CODE 237990. SIZE STANDARD: $28,500,000.00

Note New Requirement: Bonds, Powers of Attorney, statements of authenticity and continuing validity, and all related documents MUST NOT bear computer printer generated signatures and/or seals. Documents bearing signatures and/or seals generated as part of a document, as opposed to being affixed to the document AFTER its generation, will not be accepted. Submission of such documents may render the bid or offer non-responsive and ineligible for award. Please review all bonds and accompanying documents required to be submitted.

11. The Contractor shall begin performance within 5 calendar days and complete it within 180 calendar days after receiving [ ] award, [X] notice to proceed. This performance period is [X] mandatory, [ ] negotiable. *(See _____.)*

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? *(If "YES," indicate within how many calendar days after award in Item 12B.)* [X] YES [ ] NO	12B. CALENDAR DAYS 60

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 2 copies to perform the work required are due at the place specified in Item 8 by 01:00 PM *(hour)* local time 29 May 2003 *(date).* If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee [X] is, [ ] is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

SOLICITATION, OFFER, AND AWARD (Continued)

(Construction, Alteration, or Repair)

OFFER ***(Must be fully completed by offeror)***

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*	15. TELEPHONE NO. *(Include area code)*
	16. REMITTANCE ADDRESS *(Include only if different than Item 14)* **See Item 14**
CODE / FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS	SEE SCHEDULE OF PRICES

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*	20B. SIGNATURE	20C. OFFER DATE

AWARD ***(To be completed by Government)***

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)*	**ITEM**	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C. 2304(c) ☐ 41 U.S.C. 253(c)
26. ADMINISTERED BY CODE		27. PAYMENT WILL BE MADE BY: CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _____ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.

☐ 29. AWARD *(Contractor is not required to sign this document.)* Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*	31A. NAME OF CONTRACTING OFFICER *(Type or print)* TEL: EMAIL:
30B. SIGNATURE / 30C. DATE	31B. UNITED STATES OF AMERICA BY / 31C. AWARD DATE

Section SF 30 - BLOCK 14 CONTINUATION PAGE

PROJECT DESCRIPTION

The project area encompasses approximately 1,100 feet of shoreline along the east bank of the Hudson River in the Town and City of Poughkeepsie, New York. The project will stabilize the eroding shoreline and protect the only pumping station providing drinking water for the City and the Town of Poughkeepsie. Incidental benefits include creating safe and secure anchorage for two floating docks and preventing silt buildup in the adjacent deep water habitat of the rare short-nosed sturgeon and other valuable species.

BIDDERS CHECKLIST

US ARMY ENGINEER DISTRICT, NEW YORK

INVITATION FOR BID NO. DACW51-03-B-0008

CHECK LIST FOR BIDDERS

ATTACHED IS IFB NO. DACW51-03-B-0005
THE CONSTRUCTION OF MARIST COLLEGE HUDSON RIVER WATERFRONT BULKHEAD PROJECT, POUGHKEEPSIE, DUTCHESS COUNTY, NY.

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Section 00010 - Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		4,560	Square Foot		
	Turbidity Curtain FFP PURCHASE REQUEST NUMBER: W16ROE-2357-0867				
				NET AMT	

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1	Lump Sum		
	Clearing, Grubbing, Demolition and FFP Offsite Disposal				
				NET AMT	

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		140	Cubic Yard		
	Wire Mesh Gabions FFP				
				NET AMT	

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004	Geotextiles (Filter Fabric) FFP	8,000	Square Foot		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005	Rip-Rap FFP	1,000	Cubic Yard		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006	Steel Sheet Piling FFP	3,520	Square Foot		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007	Concrete Encasement FFP	78	Cubic Yard		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008	Timber Curbing FFP	220	Linear Foot		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009	Excavation, Unclassified FFP	580	Cubic Yard		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010		400	Cubic Yard		
	Reshaping of Existing Rip-Rap FFP				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0011		300	Cubic Yard		
	Structural Bedding Material, 4" FFP				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0012		300	Cubic Yard		
	3/4" Crushed Stone FFP				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0013		5,200	Pound		
	Epoxy-Coated Reinforced Steel FFP				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0014		1	Lump Sum		
	Subsurface Borings/Drillings FFP				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0015		3	Each		
	Proof Test Holes FFP				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0016		3	Each		
	Penetration Tests FFP				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0017		450	Linear Foot		
	Steel Caissons w/sheet pile connectors FFP				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0018		220	Linear Foot		
	Steel Water Beam FFP				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0019	Miscellaneous Steel FFP	1	Lump Sum		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0020	Corrosion Protection Coating of Bulkhead FFP	6,120	Square Foot		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0021	Cathodic Protection of Bulkhead FFP	1	Lump Sum		

NET AMT

FOB: Destination

TOTAL OF BIDDED LINE ITEMS

GRAND TOTAL (CLINs 0001-0021)_____

Section 00100 - Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY REFERENCE

52.204-6	Data Universal Numbering System (DUNS) Number	JUN 1999
52.214-3	Amendments To Invitations For Bids	DEC 1989
52.214-4	False Statements In Bids	APR 1984
52.214-5	Submission Of Bids	MAR 1997
52.214-6	Explanation To Prospective Bidders	APR 1984
52.214-7	Late Submissions, Modifications, and Withdrawals of Bids	NOV 1999
52.214-12	Preparation Of Bids	APR 1984
52.214-18	Preparation of Bids-Construction	APR 1984
52.214-19	Contract Award-Sealed Bidding-Construction	AUG 1996
52.214-21	Descriptive Literature	APR 2002
52.214-34	Submission Of Offers In The English Language	APR 1991
52.214-35	Submission Of Offers In U.S. Currency	APR 1991
52.225-12	Notice of Buy American Act Requirement--Construction Materials Under Trade Agreements	MAY 2002
52.232-16	Progress Payments	FEB 2002
52.232-38	Submission of Electronic Funds Transfer Information with Offer	MAY 1999

CLAUSES INCORPORATED BY FULL TEXT

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a FIRM-FIXED PRICE TYPE contract resulting from this solicitation.

(End of clause)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be 20% percent of the bid price or $3,000,000.00, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of clause)

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Chief, Contract Division, 26 Federal Plaza, Room 1843, New York, NY 10278.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

http://farsite.hill.af.mil/

(End of provision

52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (APR 1984)

(a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of"(DEVIATION)" after the date of the provision.

(b) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of provision)

Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY REFERENCE

52.203-11	Certification And Disclosure Regarding Payments To Influence Certain Federal Transactions	APR 1991
252.209-7001	Disclosure of Ownership or Control by the Government of a Terrorist Country	MAR 1998

CLAUSES INCORPORATED BY FULL TEXT

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 237990.

(2) The small business size standard is $28.5 Milion.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it ( ) is, ( ) is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ( ) is, ( ) is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a service-disabled veteran-owned small business concern.

(6) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, as part of its offer, that--

(i) It ( ) is, ( ) is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ( ) is, ( ) is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:_____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern--

(1) That is at least 51 percent owned by one or more women; in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-2 EQUAL LOW BIDS. (OCT 1995)

(a) This provision applies to small business concerns only.

(b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.

_____
_____

(c) Failure to identify the labor surplus area as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) ( ) It has, ( ) has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) ( ) It has, ( ) has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

( ) (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

( ) (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

( ) (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

( ) (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

( ) (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(End of clause)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY REFERENCE

52.202-1 Alt I	Definitions (Dec 2001) --Alternate I	MAY 2001
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	JUN 1997
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	JUL 1995
52.211-13	Time Extensions	SEP 2000
52.211-18	Variation in Estimated Quantity	APR 1984
52.214-26	Audit and Records--Sealed Bidding	OCT 1997
52.214-27	Price Reduction for Defective Cost or Pricing Data - Modifications - Sealed Bidding	OCT 1997
52.214-28	Subcontracting Cost Or Pricing Data--Modifications--Sealed Bidding	OCT 1997
52.214-29	Order Of Precedence--Sealed Bidding	JAN 1986
52.219-8	Utilization of Small Business Concerns	OCT 2000
52.219-14	Limitations On Subcontracting	DEC 1996
52.222-3	Convict Labor	AUG 1996
52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation	SEP 2000
52.222-6	Davis Bacon Act	FEB 1995
52.222-7	Withholding of Funds	FEB 1988
52.222-8	Payrolls and Basic Records	FEB 1988
52.222-9	Apprentices and Trainees	FEB 1988
52.222-10	Compliance with Copeland Act Requirements	FEB 1988
52.222-11	Subcontracts (Labor Standards)	FEB 1988
52.222-12	Contract Termination-Debarment	FEB 1988
52.222-13	Compliance with Davis-Bacon and Related Act Regulations.	FEB 1988
52.222-14	Disputes Concerning Labor Standards	FEB 1988
52.222-15	Certification of Eligibility	FEB 1988
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	APR 2002
52.222-27	Affirmative Action Compliance Requirements for Construction	FEB 1999
52.222-35	Equal Opportunity For Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans	DEC 2001
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-37	Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era and Other Eligible Veterans	DEC 2001
52.223-9	Estimate of Percentage of Recovered Material Content for EPA-Designated Products	AUG 2000
52.223-14	Toxic Chemical Release Reporting	OCT 2000
52.225-9	Buy American Act--Construction Materials	MAY 2002

52.225-13	Restrictions on Certain Foreign Purchases	JUL 2000
52.226-1	Utilization Of Indian Organizations And Indian-Owned Economic Enterprises	JUN 2000
52.227-1	Authorization and Consent	JUL 1995
52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	AUG 1996
52.228-15	Performance and Payment Bonds--Construction	JUL 2000
52.229-3	Federal, State And Local Taxes	JAN 1991
52.229-5	Taxes--Contracts Performed In U S Possessions Or Puerto Rico	APR 1984
52.232-5	Payments under Fixed-Price Construction Contracts	MAY 1997
52.232-23 Alt I	Assignment of Claims (Jan 1986) - Alternate I	APR 1984
52.232-27	Prompt Payment for Construction Contracts	FEB 2002
52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration	MAY 1999
52.233-1	Disputes	JUL 2002
52.233-3	Protest After Award	AUG 1996
52.236-5	Material and Workmanship	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-13	Accident Prevention	NOV 1991
52.236-15	Schedules for Construction Contracts	APR 1984
52.236-17	Layout of Work	APR 1984
52.236-26	Preconstruction Conference	FEB 1995
52.242-13	Bankruptcy	JUL 1995
52.242-14	Suspension of Work	APR 1984
52.243-5	Changes and Changed Conditions	APR 1984
52.244-6	Subcontracts for Commercial Items	MAY 2002
52.246-1	Contractor Inspection Requirements	APR 1984
52.246-12	Inspection of Construction	AUG 1996
52.247-34	F.O.B. Destination	NOV 1991
52.249-2 Alt I	Termination for Convenience of the Government (Fixed-Price) (Sep 1996) - Alternate I	SEP 1996
52.253-1	Computer Generated Forms	JAN 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies	MAR 1999
252.203-7002	Display Of DOD Hotline Poster	DEC 1991
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7004	Required Central Contractor Registration	NOV 2001
252.205-7000	Provisions Of Information To Cooperative Agreement Holders	DEC 1991
252.209-7000	Acquisition From Subcontractors Subject To On-Site Inspection Under The Intermediate Range Nuclear Forces (INF) Treaty	NOV 1995
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	MAR 1998
252.219-7011	Notification to Delay Performance	JUN 1998
252.225-7012	Preference For Certain Domestic Commodities	APR 2002
252.225-7016	Restriction On Acquisition Of Ball and Roller Bearings	DEC 2000
252.225-7031	Secondary Arab Boycott Of Israel	JUN 1992
252.236-7000	Modification Proposals-Price Breakdown	DEC 1991
252.236-7001	Contract Drawings, Maps, and Specifications	AUG 2000
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998

252.244-7000	Subcontracts for Commercial Items and Commercial Components (DoD Contracts)	MAR 2000
252.246-7000	Material Inspection And Receiving Report	DEC 1991
252.247-7023	Transportation of Supplies by Sea	MAY 2002
252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000

CLAUSES INCORPORATED BY FULL TEXT

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within 5 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 180 days after receipt of NTP.* The time stated for completion shall include final cleanup of the premises.

*The Contracting Officer shall specify either a number of days after the date the contractor receives the notice to proceed, or a calendar date.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of $404.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except--

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer.

These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

___ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate

workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
6.4%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

(1) Name, address, and telephone number of the subcontractor;

(2) Employer's identification number of the subcontractor;

(3) Estimated dollar amount of the subcontract;

(4) Estimated starting and completion dates of the subcontract; and

(5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is New York, Dutchess County, Poughkeepsie.

(End of provision)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

http://farsite.hill.af.mil/

(End of clause)

52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES (APR 1984)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(b) The use in this solicitation or contract of any Federal Acquisition Regulations (48 CFR 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

SECTION 00800 ADDENDUM

SECTION 00800

SPECIAL CONTRACT REQUIREMENTS

(NYD rev 8/10/01)

1. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK:

a. The Contractor shall be required to (I) commence work under this contract within 5 calendar days after the date the Contractor receives the notice to proceed, (ii) prosecute the work diligently, and (iii) complete the entire work ready for use not later than 180 calendar days after the date the Contractor receives the notice to proceed, except in case the Contracting Officer determines that seeding is not feasible during the construction period, the Contractor shall accomplish such seeding in the first planting period following the completion of construction. This action will not operate to extend the performance time for the balance of the work or warrant additional payments to the contractor. The time stated for completion shall include final cleanup of the premises.

b. Location: The site of work is located at on the east bank of the Hudson River at Marist College in the Town of Poughkeepsie, Dutchess County, New York.

c. The Contractor shall furnish all labor, materials, equipment, and services (except those furnished by the Government) for the following work: Bulkhead improvements along 1,110± feet of the Hudson River shoreline including, but not limited to, clearing and grubbing, the demolition and removal of an existing boat launch; the demolition and removal of existing construction and rip rap and debris and rubbish removal. The work also includes new sheet piling, fitted rip rap rock bulkhead work, and the installation of the concrete base for a fixed pier.

d. All work shall be in accordance with the drawings and specifications or instructions attached hereto and made a part thereof, or to be furnished hereafter by the Contracting Officer and subject, in every detail, to his supervision, direction, and instructions.

e. Magnitude of Construction Project: The estimated value of the proposed work is between $500,000 and $1,000,000.00.

2. LIQUIDATED DAMAGES – CONSTRUCTION

a. If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of $404.00 for each day of delay.

b. If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

c. If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

d. At a time before the project is physically complete but is functionally complete to the satisfaction of the Government, the Government at its sole discretion may agree to accept transfer of the facility or project provided that the remaining work to be done ("punchlist") is completed no later than 30 days from the date of transfer. In this case the contractor shall pay liquidated damages for punchlist items not completed in the daily amount of $150.00 per day commencing after 30 days of project transfer or after date required for project completion (including all extensions), whichever occurs later.

3. EQUAL OPPORTUNITY PREAWARD CLEARANCE OF SUBCONTRACTORS (APR 1984)

Notwithstanding the clause of this contract entitled "Subcontracts", the Contractor shall not enter into a first-tier subcontract for an estimated or actual amount of $1 million or more without obtaining in writing from the Contracting Officer a clearance that the proposed subcontractor is in compliance with the equal opportunity requirements and therefore is eligible for award. (FAR 52.222-28)

4. INSURANCE

See Section **00902**

5. PERFORMANCE OF WORK BY THE CONTRACTOR (1984 APR)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least twenty (20) percent of the total amount of work to be performed under the contract. This percentage may be reduced by supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government. (FAR 52.236-1)

6. CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in 4 copies. Each

certificates shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certification apply. Copies of laboratory tests reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfying material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements. (ECI 7-670.3)

7. IMPLEMENTING GUARANTEES

At any time subsequent to the acceptance by the Government of a completed installation under this contract, which installation is required to be covered by a specific guarantee under the terms of the various sections in the TECHNICAL PROVISIONS, the Base Commander will be an authorized party for the purpose of implementing the provisions of such guarantees in behalf of the Government.

8. BID GUARANTEE

See contract clause entitled BID GUARANTEE in Section 00700 CONTRACT CLAUSES.

9. CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS

See contract clause entitled CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS in Section 00700 CONTRACT CLAUSES.

Drawing No.	Drawing Title	Date of Issue
C-1	Title Sheet and Site Data	10/22/02
C-2	Site Plan – Existing Conditions	10/22/02
C-3	Erosion Control Plan and Site Access/Work Limits Plan	10/30/02
C-4	Site Plan – Proposed Improvements	10/22/02
C-5	Site Plan – North End Proposed Improvements	10/22/02
C-6	Site Plan – South End Proposed Improvements	10/22/02
C-7	Boathouses – Existing Conditions	10/30/02
C-8	Boathouses – Proposed Improvements	10/30/02
C-9	Bulkhead Details	10/30/02
C-10	Bulkhead Sections	10/30/02
C-11	Survey & Cross-Sections of Existing and New Work Conditions - 1	10/22/02
C-12	Survey & Cross-Sections of Existing and New Work Conditions - 2	10/22/02

10. RECORD DRAWINGS (R.6-01)

a. **General:** The Contractor will maintain as-built drawings during the construction period and will submit final record drawings at the completion of individual facilities. The Government will provide to the Contractor the CAD (Computer-Aided Drafting) files consisting of compact (computer) disks or magnetic media of the drawing files in the appropriate CAD format (i.e. “Microstation”, “Autocad”, etc.) for the project. The Contractor is required to make prints or mylars from the CAD files and continuously maintain drawings to show current as-built conditions for the duration of the construction. Except for updates as indicated below, the Contractor may maintain as-built drawings by marking up drawings by hand or by CAD methods. Scanned drawings will not be acceptable. If the Government cannot provide CAD files for the project drawings, mylar (reproducible) drawings will be provided. The contractor will then be required to comply with all requirements indicated herein by the use of hand drafting.

Note: If this project is a design-build construction type, where the Contractor accomplishes the design, the drawings will be developed by the Contractor in the appropriate CAD file format (or reproducible drawings) as prescribed by the contract, instead of the Government providing them to the Contractor. All other requirements indicated herein will apply.

b. **Progress As-built Prints:** During construction the Contractor is responsible for maintaining up to date one set of paper prints to show as-built construction conditions. These prints shall be kept current and available on the job site at all times. All changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accordingly and neatly recorded as they occur by means of details and notes. The as-built prints will be jointly

inspected for accuracy and completeness by the Contracting Officer's Representative and a responsible representative of the Contractor prior to submission of each monthly pay estimate. Progress as-builts shall show the following information, but not limited thereto:

(1) The location and description of any utility lines, valves, or other installations of any kind within the construction area. The location includes dimensions to permanent features.

(2) The location and dimensions of any changes with the building and structure.

(3) Correct grade or alignment of roads, structures or utilities if any changes were made from the contract plans.

(4) Correct elevations if changes were made in site grading

(5) Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabricated, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

(6) The topography and grades of all drainage installed or affected as part of the project construction.

(7) All changes, which result from contract modifications.

(8) Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the as-built prints.

(9) All amendments to the contract drawings issued during the solicitation period shall be posted on the as-built drawings.

c. **Hand Drafting:** If mylars only are provided to the Contractor, they shall be updated using hand drafting. Only personnel proficient in the preparation of engineering drawings to standards satisfactory and acceptable to the Government shall be employed to modify the mylar reproduction drawings or prepare additional new drawings. All additions and corrections to the contract drawings shall be neat, clean and legible, and shall match the adjacent line work and/or lettering being annotated in type, density, size and style. All drafting work shall be done using the same medium (pencil, plastic lead or ink) that was employed on the original contract drawings and with graphic lead on paper base material. The title block to be used for any new as-built drawings shall be similar to that used on the original contract drawings.

d. **Protection of Records**: The Contractor shall be responsible for the protection and safety of mylars and CAD record until returned to the Contracting Officer. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at his expense.

e. **50% As-Built Update**: At the 50% point in construction of this project (as determined by progress payments) the Contractor will update the CAD files of the project drawings in the appropriate CAD program to show as-built conditions as above, and submit an updated computer disk and one set of prints to the Contracting Officer for approval. If mylars only are provided to the Contractor, they shall be updated at this stage using hand-drafting as specified herein, and the Contractor shall submit one set of prints to the Contracting Officer for approval. Any required corrections will be made by the Contractor before payment will be approved for this item. The Contractor must use the updated CAD record or mylar drawings to produce required prints.

f. **Preliminary Record Drawing Submittal:** At least thirty calendar (30) days before the anticipated date of final acceptance inspection the Contractor shall deliver two copies of progress prints showing final as-built conditions to the Contracting Officer for review and approval. These prints shall correctly show all the features of the project as it has been constructed, adding such additional drawings as may be necessary. They shall be printed from the CAD files updated in the appropriate CAD program, or from updated mylars if mylars only were provided to the Contractor. Within ten days, the Government will provide the Contractor one set of prints indicating required corrections to the preliminary submittal. Contractor will correct and resubmit within 5 days. Any required subsequent review and resubmission periods will each be accomplished within 5 days. Upon Government approval of the preliminary submittal, the Contractor will prepare final record drawings.

g. **Record Drawing Submission:** In the appropriate CAD program each drawing shall be marked with the words “RECORD DRAWING AS-BUILT” followed by the name of the Contractor in font which will print at least 3/16” high. All revisions to the original contract drawings will be dated in the revision block. All prints and mylars must be reproduced from the updated CAD files. If mylars only were provided to the Contractor, they shall be hand-lettered or stamped as indicated above, and revisions shown in revision block. A minimum of 5 calendar days before the anticipated date of final acceptance inspection of the project the Contractor shall deliver to the Contracting Officer:

Three (3) CD’s (ROM) of CAD files of Record Drawings.
One (1) set of Mylar Record Drawings
One (1) copy of prints of Record Drawings.

Failure to make an acceptable submission of Record Drawings will delay the Final Acceptance Inspection for the project and shall be cause for withholding any payment due the Contractor under this contract..

h. **Property**: All paper prints, reproducible drawings and CAD files will become property of the Government upon final approval. Approval and acceptance of the final record drawings shall be accomplished before final payment is made to the Contractor.

i. **Payment:** No separate payment will be made for the as-built and record drawings or updating of CAD files required under this contract, and all costs in connection therewith shall be considered a subsidiary obligation of the Contractor.

11. DESIGNATION OF PROPERTY ADMINISTRATOR

The Chief, Property and Accounting Section, U.S. Army Engineer District, New York, Federal Building, 26 Federal Plaza, New York, N.Y. 10278-0090 is designated as Property Administrator, in connection with this contract.

12. PHYSICAL DATA

Information and data furnished or referred to below is furnished for the Contractor's information. However, it is expressly understood that the Government will not be responsible for any interpretation or conclusion drawn therefrom by the Contractor.
(FAR 52.236-4)

a. Weather Conditions: Climatological data determined from records of the U.S. Weather Bureau Station,

Mean Annual Temperature: 47.4 degrees F
Mean Annual Precipitation: 36.2 inches

See also paragraph entitled TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER.

a. Transportation Facilities:

(1) Railroads: Conrail serves the locality of the proposed work. The Contractor shall make all arrangements at his expense for the use of sidings necessary for the delivery of materials, equipment, supplies, and other facilities required for completion of the work. The Contractor's use of sidings must be arranged so as not to interrupt or delay the operation of Marist College.

(2) Highways and Roads: Interstate 84 and U.S. Route 9 serve the locality of the proposed work. Roads within the work area proposed to be used by the Contractor, shall be subject to prior approval of the Post authorities and such roads, if used, shall be maintained throughout construction and shall be restored to as good condition as existed prior to their use. The Contractor shall also construct such temporary haul roads and bridges as may be necessary for the conduct of his work. Any such temporary construction shall be restored to its original condition. All costs for the use of existing transportation facilities, for the construction of temporary facilities, and for maintenance, repair, removal and restoration shall be borne by the Contractor.

13. PRICING OF ADJUSTMENTS

When costs are a factor in any determination of a contract price adjustment pursuant to the Changes clause or any other clause of this contract, such costs shall be in accordance with Part 31 of the Federal Acquisition Regulation and DFARS 252.215-7000 (APR 1985) as follows: In determining whether a pricing adjustment is expected to exceed $100,000, the term "pricing

adjustment" shall mean "the aggregate increases and /or decreases in cost plus applicable profits."

14. PAYMENT FOR MATERIALS DELIVERED OFF-SITE

Pursuant to the Contract Clause in this contract titled :Payment Under Fixed-Price Construction Contracts", materials delivered to the Contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the Contract Clauses are fulfilled. Payment for items delivered to locations other than the work site will be limited to those materials which have been approved, if required by the technical provisions; those materials which have been fabricated to the point where they are identifiable to an item of work required under this contract. Such payment will be made only after receipt of paid or receipted invoices or invoices with cancelled check showing title to the items in the prime contractor and including the value of materials and labor incorporated into the item.

15. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE

a. Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractors at any tier shall be based on actual cost data when the Government can determine both ownership and operating costs for each piece of equipment or equipment groups of similar serial and series from the Contractor's accounting records. When both ownership and operating costs cannot be determined from the Contractor's accounting records, equipment costs shall be based upon the applicable provisions of EP 1110-1-8, *"Construction Equipment Ownership and Operating Expense Schedule," Region 1. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiation shall apply. For retrospective pricing, the schedule in effect at the time the work was performed shall apply.

(* This manual can be ordered from the Government Printing office by calling telephone number (202) 783-3238. There is a charge for the manual.)

b. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36 substantiated by certified copies of paid invoices. Rates for equipment rented from an organization under common control, lease-purchase or sale-leaseback arrangements will be determined using the schedule except that rental costs leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees are allowable. Costs for major repairs and overhaul are unallowable.

c. When actual equipment costs are proposed and the total amount of the pricing action is over $25,000, cost or pricing data shall be submitted on Standard Form 1411, "Contract Pricing Proposal Cover Sheet." By submitting

cost or pricing data, the Contractor grants to the Contracting Officer or an authorizing representative the right to examine those books, records, documents and other supporting data that will permit evaluation of the proposed equipment costs. After price agreement the Contractor shall certify that the equipment costs or pricing data submitted are accurate, complete and current.

16. ALTERATIONS IN CONTRACT (APR 1984)

Portions of this contract are altered as follows:

Add the following sentence to paragraph "g" of basic contract clause, SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (1984 APR):

"Upon completing the work under this contract, the Contractor shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the equipment is completed and accepted."
Alt.1 (APR 1984) (FAR 52.236-21) (7-602.54 (b) (1) OCT 1976)

17. AVAILABILITY AND USE OF UTILITY SERVICES AND PERMITS (APR 1984)

a. The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters where required. The Contractor shall furnish to the Contracting Officer Representative a complete system layout drawing showing type of materials to be used and method of installation for all temporary electrical systems. Telephone service is the responsibility of the Contractor. The Contractor shall maintain all temporary lines in a workmanlike manner satisfactory to the Contracting Officer Representative. Before final acceptance of the work by the Government, the Contractor shall remove all temporary connections, distribution lines, meters and associated paraphernalia. (FAR 52.235-14).

b. Utility Service Interruptions. The Contractor shall submit written notification not less than 15 calendar days in advance of each interruption of each utility and communication service to or within existing buildings and facilities being used by others. No single outage will exceed 4 hours unless approved in writing. The time and duration of all outages will be coordinated with the Using Agency by the Contracting Officer Representative. All outages or interruptions shall be scheduled during weekends, unless specifically approved by the Contracting Officers Representative.

c. Digging Permits and Road Closings. No excavation whether minor or major including trenching, sidewalk replacement, etc. will be permitted without an approved digging permit. No road closure will be permitted without an approved permit. The Contractor shall allow 14 calendar days from date of written application to receive permission to dig and to close roads. Contractor will ascertain the name of the individual to submit the application from Government representative. Contractor shall carefully avoid contact or damage with any known or identified

underground utilities. Roads shall only be closed one lane at a time, and vehicular traffic shall be allowed to pass through the construction area. Work on or near roadways shall be flagged in accordance with the safety requirements in Safety and Health Requirements Manual EM 385-1-1, which forms a part of these specifications. Work located along the alert force route shall not cause blockage, and the Contractor shall maintain unobstructed access for alert force traffic at all times. Contractor shall apply for renewal of work permits as required if the work continues beyond the original permit expiration date.

d. Metal Burning and Welding and Access to Confined Spaces. Permits for such work shall be obtained in advance as required by the operator of the facility. Contractor shall coordinate through Government Representative for such permits.

18. SALVAGE MATERIALS AND EQUIPMENT

Not Used.

19. IDENTIFICATION OF GOVERNMENT-FURNISHED PROPERTY (APR 1984)

a. The Government will furnish to the Contractor the property identified in the Schedule to be incorporated or installed into the work or used in performing the contract. The listed property will be furnished f.o.b. railroad cars at the place specified in the contract Schedule or f.o.b. truck at the project site. The Contractor is required to accept delivery, pay any demurrage or detention charges, and unload and transport the property to the job site at its own expense. When the property is delivered, the Contractor shall verify its quantity and condition and acknowledge receipt in writing to the Contracting Officer. The Contractor shall also report in writing to the Contracting Officer within 24 hours of delivery any damage to or shortage of the property as received. All such property shall be installed or incorporated into the work at the expense of the Contractor, unless otherwise indicated in this contract.

b. Each item of property to be furnished under this clause shall be identified in the Schedule by quantity, item and description. (FAR 52.245-3)

Item No.	Description	Quantity
	None	

20. CONSTRUCTION PROJECT SIGNS

The Contractor shall construct two signs; one for project identification and the other to show on-the-job safety performance.

a. Sample sign drawings together with mounting and fabrication details are provided at the end of this section. The signs shall be erected as soon as possible and within 15 calendar days after the date of Notice to Proceed.

b. The two signs are to be displayed side by side and mounted for reading by passing viewers. Exact placement location will be designated by the Contracting Officer.

c. Panels are fabricated using HDO (High-Density Overlay) plywood with dimensional lumber uprights and bracing. The sign faces are non-reflective vinyl.

d. All legends are to be die-cut or computer-cut in the sizes and type-faces specified and applied to the white panel background following the graphic formats shown on the attached sheets. The Communications Red panel on the left side of the construction project sign with Corps signature (reverse version) is screen printed onto the white background.

e. No separate payment will be made for erecting and maintaining the signs and all costs in connection therewith will be considered the obligation of the Contractor. Upon completion of the project, the Contractor shall remove the signs from the work area.

21. LABOR SURPLUS AREA EXPENDITURE REQUIREMENTS (JUL 1978)

a. The site of the construction work is located in an area determined by the Secretary of Labor to be a Labor surplus Area. Accordingly the Contractor hereby agrees to perform a substantial portion of the contract work in this or in any other labor surplus area. "Substantial portion" means the aggregate costs that will be incurred by the Contractor and his first-tier subcontractors and suppliers, on account of manufacturing, production, or services performed in this or any labor surplus area, and the costs that will be incurred by second-tier and lower-tier subcontractors on the construction site will exceed fifty percent (50%) of the price of this contract.

b. Upon request, the Contractor shall furnish to the Contracting Officer data to substantiate that this obligation is satisfied.

c. The Contracting Officer will furnish upon request a list of labor surplus areas.

22. TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

1. This provision specifies the procedure for determination of time extension for unusually severe weather in accordance with the contract clause entitled "Default: (Fixed Price Construction)." In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

a. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

b. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

2. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	ARP	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
8	7	8	9	9	8	6	7	5	8	7	9

3. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph 2 above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)". (ER 415-1-5) (31 Oct 89)

23. SCHEDULING AND DETERMINATION OF PROGRESS

Pursuant to the contract clause, SCHEDULES FOR CONSTRUCTION CONTRACTS, the Contractor shall prepare and submit for approval a practicable project schedule. The type of schedule and detailed requirements as well as timing of this submittal shall be as specified in specification section 'PROJECT SCHEDULE'.

This schedule will be the medium through which the timeliness of the Contractor's construction effort is appraised. When changes are authorized that result in contract time extensions, Contractor shall submit a modified schedule for approval by the Contracting Officer.

The terms of Contract Clause, SCHEDULING FOR CONSTRUCTION CONTRACTS, with reference to overtime, extra shifts, etc., may be invoked when the Contractor fails to start or complete work features or portions of same by the time indicated by the milestones dates on the approved project schedule, or when it is apparent to the Contracting Officer from the Contractor's actual progress that these dates will not be met.

Neither on the project schedule as originally submitted nor on any updated periodic schedules which the Contractor is required to prepare and submit, shall be actual progress to be entered include or reflect any materials which even though on the site, are not yet installed or incorporated in the work. For payment purposes only, an allowance will be made by the Contracting Officer of up to 100 percent of the invoiced cost of materials or equipment delivered to the site but not incorporated into the construction, pursuant to Contract Clause, PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS. The making of such an allowance will be contingent upon a determination by the Contracting Officer that the Contractor's compliance with the quality control requirements of the contract is more than satisfactory.

24. IDENTIFICATION OF EMPLOYEES

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon the release of any employees. When required by the Contracting Officer, the Contractor shall obtain and submit finger-prints of all persons employed or to be employed on the project.
(DOD FAR Supplement 52.236-7007)

25. FIELD OFFICE – Not Used

26. EXCLUSION OF PERIODS IN COMPUTING COMPLETION SCHEDULES (JAN 1965)

Not Used.

27. QUANTITY SURVEYS (APR 1984)

a. Quantity surveys shall be conducted, and the data derived from these surveys shall be used in computing the quantities of work performed and the actual construction completed and in place.

b. The Contractor shall conduct the original and final surveys and surveys for any periods for which progress payments are requested. All these surveys shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement in a specific instance. The Government shall make such computations as are necessary to determine the quantities of work performed or finally in place. The Contractor shall make the computations based on the surveys for any periods for which progress payments are requested.

c. Promptly upon completion a survey, the Contractor shall furnish the originals of all field notes and all other records relating to the survey or

to the layout of the work to the Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer. (FAR 52.236-16)

28. TIME EXTENSIONS (APR 1984)

Not Used.

29. MISPLACED MATERIAL

Should the Contractor, during the progress of the work, lose, dump, throw overboard, sink, or misplace any material, plant, machinery, or appliance, which in the opinion of the Contracting Officer may be dangerous to or obstruct navigation, the Contractor shall recover and remove the same with the utmost dispatch. The Contractor shall file immediate notice, with description and location of such obstructions, to the Contracting Officer or inspector, and when required shall mark or buoy such obstructions until the same are removed. Should he refuse, neglect, or delay compliance with the above requirements, such obstructions may be removed by the Contracting Officer, and the cost of such removal may be deducted from any money due or to become due the Contractor, or may be recovered under his bond. The liability of the Contractor for the removal of a vessel wrecked or sunk without fault or negligence shall be limited to that provided in Sections 15,19, and 20 of the River and Harbor Act of March 3, 1899. (33 U.S.C. 410 et seq.) (DOD FAR Supplement 52.236-7006)

30. SUPERINTENDENCE OF SUBCONTRACTORS (JAN 1965)

a. The Contractor shall be required to furnish the following, in addition to the superintendence required by the Contract Clause titled, 'SUPERINTENDENCE BY THE CONTRACTOR."

(1) If more than 50% and less than 70% of the value of the contract work is subcontracted, one superintendent shall be provided at the site and on the Contractor's payroll to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

(2) If 70% or more of the value of the work is subcontracted, the Contractor shall be required to furnish two such superintendents to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

b. If the Contracting Officer, at any time after 50% of the subcontracted work has been completed, finds that satisfactory requirement is being made, he may waive all or part of the above requirement for additional superintendence subject to the right of the Contracting Officer to reinstate such requirement if at any time during the progress of the remaining work he finds that satisfactory progress is not being made.

(DOD FAR Supplement 52.236-7008)

31. PROCEDURES FOR SUBMISSION AND PAYMENT OF ALL CONTRACT PAYMENTS

In addition to the requirements contained in the Contract Clause entitled "PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS" and to implement the requirements of the Prompt Payment Act Amendments of 1988, P.L. 100-496, the following shall apply to all payments made under this contract:

a. At the time of submission of the progress chart, the Contractor shall submit for approval by the Contracting officer or his authorized representative a breakdown of the contract work which shall be to the degree of detail required by the Contracting Officer, or his representative, to effect reasonable progress payments. The Contracting Officer, or his representative, shall review this breakdown within 30 calendar days after receipt and either advise the Contractor that it is approved or disapproved, and if disapproved the reasons for disapproval. Only after the breakdown is approved shall any payment invoice be accepted from the Contractor and any payment made to him. The Contracting Officer can determine if it is in the best interest of the Government to make payment without an approved breakdown; however, in no case shall more than 10% of the contract amount be paid unless the breakdown is approved.

b. The Contractor shall submit his request for payment by submission of a proper invoice to the office or person(s) designated in subparagraph c. For purposes of payment a "proper invoice" is defined as the following:

(1) An estimate of the work completed in accordance with the approved breakdown indicating the percentage of work of each item and the associated costs.

(2) A properly completed Eng Form 93 and 93a (where required).

(3) All contractual submissions indicated elsewhere in this contract to be submitted with payment, such as updated progress schedules, updated submittal registers, etc.

(4) The following certification executed by a responsible official of the organization authorized to bind the firm. A “responsible official” would be a corporate officer, partner, or owner, in the case of a sole proprietorship.

I hereby certify, to the best of my knowledge and belief, that –

(a) The amounts requested are only for performance in accordance with the specifications, terms and conditions of the contract;

(b) Payments to subcontractors and suppliers have been made form previous payments received under the contract and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract requirements and the requirements of Chapter 39 of Title 31, Untied States Code; and

(c) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

(d) All required prime and subcontractor payrolls have been submitted.

_____
(Name)

_____
(Title)

_____
(Date)

c. The Government shall designate the office or person(s) who shall first receive the invoice submissions and the Contractor shall be so notified at the pre-construction conference. In addition to the designated Project Engineer, the Contractor shall at the
same time submit one copy of the detailed breakdown and the Eng Form 93 and 93a Form to the Area Engineer.

d. The Government representative shall return any request for payment which is deemed defective within 7 days of receipt and shall specify the defects. If the defect concerns a disagreement as to the amount of work performed and or the amount of the payment being submitted, the Government and the Contractor’s representative should meet to resolve the difference and

reach agreement. Upon agreement, the Contractor shall submit a new breakdown and Eng Form 93 (and 93a) and any other submissions requiring correction. These will be incorporated with the previous submittal and will then constitute a proper invoice.

e. If agreement cannot be reached, the Government shall determine the proper amount per Contract Clause, PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS and process the payment accordingly. In this event, a "proper invoice" for Prompt Payment Act purposes will not have been submitted to the Government.

f. The Government shall pay the Contractor in accordance with the following time frames:

(1) Progress Payments . From the date a "proper invoice" is received, in accordance with subparagraphs b and d of this clause, the Government will issue a check within 14 calendar days.

(2) Reduction in Retainage Payment. If during the course of the contract, a reduction in retainage payment is required, the Government shall issue a check within 14 calendar days after the approval of the release to the Contractor by the Contracting Officer or his authorized representative.

(3) Final Payment. A final payment request shall not be considered valid until the Contractor has fulfilled all contract requirements including all administrative items, payrolls, warranties, etc. and has submitted a release of claims. When the Contractor has fulfilled all contract requirements and a "proper invoice" has been submitted, the Government shall issue a check within 14 days from the date of acceptance o the project by the Contracting Officer.

32.VERIFICATION OF SMALL BUSINESS UTILIZATION

a. This clause is applicable to small business concerns whose contracts exceed $1,000,000.

b. In accordance with the clause at FAR 52.219-8, entitled UTILIZATION OF SMALL BUSINESS CONCERNS AND DISADVANTAGED BUSINESS CONCERNS, in effect on the date of this contract, the Contracting Office may survey the extent of small and small disadvantaged business utilization under this contract. The Contractor may be required to report to the Contracting Officer statistical data on the number and dollars amounts of subcontracting awards with small business and small disadvantaged businesses.

c. As appropriate, the Contracting Officer may require one or more follow-up reports to the initial report.

d. The Contractor agrees to insert this clause in any subcontract that may exceed $1,000,000, including this subparagraph d.

33.HAZARDOUS MATERIAL IDENTIFICATION & MATERIAL SAFETY DATA (NOV 1991)

a. Hazardous material, as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract.)

b. The Offeror must list any hazardous material, as defined in paragraph "a" of this clause, to "e" delivered under this contract. The

hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material *(if none, insert NONE)*
_____
_____
_____
Identification No.
_____
_____
_____

c. The apparently successful Offeror, by acceptance of the contract, certifies that the list in paragraph b of this clause is complete. This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

d. The apparently successful Offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material, identified in paragraph “b” of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful Offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award my result in the apparently successful Offeror being considered non-responsible and ineligible for award.

e. If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph “d” of this clause or the certification submitted under paragraph “c” of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

f. Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

g. Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

h. The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to:

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting or disposing of hazardous materials.

(ii) Obtain medical treatment for those affected by the material, and;

(iii) Have other use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources. (FAR 52.223-3)

34. SAFETY AND HEALTH REQUIREMENTS MANUAL

If this contract is for construction or dismantling, demolition, or removal of improvements with any Department of Army agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation. The latest edition of the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1 and it changes are available at http://www.hq.usace.army.mil (at the HQ homepage select Safety and Occupational Health). Contractor shall be responsible for complying with the current edition and all changes posted on the web as of effective date of this solicitation.

Before commencing the work, the Contractor shall: (1) Submit a written proposal for implementing the Accident Prevention Plan; and (2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

35. SPECIAL SCHEDULING REQUIREMENTS FOR MECHANICAL AND ELECTRICAL SYSTEMS

In reference to the contract clause entitled "PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS", see section entitled TESTING FOR MECHANICAL AND ELECTRICAL SYSTEMS for additional scheduling requirements for such systems.

36.SUBMISSION OF CLAIMS

The following shall be submitted to the Contracting Officer at the following address: U.S. Army Corps of Engineers, New York District, 26 Federal Plaza, New York, New York 10278-0090:

a. Claims referencing or mentioning the Contracting Disputes Act of 1978.

b. Requests for a written decision by the Contracting Officer.

c. Claims certified in accordance with the Contract Disputes Act of 1978.

No other Government representative is authorized to accept such requests. A copy shall also be provided to the Authorized Representative of the Contracting Officer.

The Contractor shall also provide the Contracting Officer with a copy of any requests for additional time, money or interpretation of contract requirements which were provided to the Authorized Representative of the Contracting Officer and which have not been resolved after 90 days.

37.PARTNERSHIP IMPLEMENTATION PLAN

To more effectively accomplish this contract, the Government proposes to form a partnership with the Contractor. This partnership would draw on the strengths of each organization in an effort to achieve a quality product within budget and on schedule. This partnership would be bilateral in make-up and participation would be totally voluntary. If mutually agreed to by both parties, a facilitator satisfactory to both parties shall be hired who would be responsible to arrange for an offsite conference location, provide all workshop materials, and compile and distribute a completed partnering agreement to all participants within 30 days of the partnering session. Conference site location will be coordinated with the Contracting Officer for approval. Contractor should plan for the attendance of approximately 15-20 individuals from the Government in addition to the Contractor's and Sub-contractor's personnel. The cost of the facilitator and conference facility will be shared equally by the Contractor and Government. All other costs associated with partnership implementation will be borne by the Contractor. It is anticipated that the partnership conference will be for one day each time and will be held on a monthly basis.

38. PRECONSTRUCTION CONFERENCE

a. A preconstruction conference will be arranged by the Contracting Officer, or his Representative, after award of contract and before commencement of work. The Contracting Officer's representative will notify the Contractor of the time and date set for the meeting. At this conference, the Contractor shall be oriented with respect to Government procedures and line of authority, contractual, administrative, and construction matters. Additionally, a schedule of required submittals will be discussed.

b. The Contractor shall bring to this conference the following items in either completed or draft form:

- The Contractor's order of work
- Accident Prevention Plan
- Quality Control Plan
- Letter appointing Superintendent
- List of subcontractors.

39. GOVERNMENT RESIDENT MANAGEMENT SYSTEM AND CONTRACTOR QUALITY CONTROL SYSTEM (QCS) MODULE

The Government will utilize an in-house Contract Administration program entitled "Resident Management System" (RMS). The Contractor shall utilize a Government furnished Quality Control System (QCS) Programming Module. See Section 01312A "Quality Control System (QCS)" for requirements.

40. CONSTRUCTION COLOR BOARD SUBMITTALS

Not Used.

41. PRICING of CONTRACTOR-FURNISHED AND INSTALLED PROPERTY AND GOVERNMENT-FURNISHED CONTRACTOR-INSTALLED PROPERTY:

The contractor shall promptly furnish and shall cause any sub-contractor or supplier to furnish, in like manner, unit prices and descriptive data required by the Government for Property Record purposes of fixtures, and equipment furnished and/or installed by the contractor or subcontractor, except prices do not need to be provided for Government-furnished Property. This information shall be listed in the RMS CQC Module furnished by the Government.

42. ENVIRONMENTAL RESPONSIBILITY (10-8-99)

Not Used.

43. COORDINATION CONFERENCES

Routine coordination conferences will be scheduled by the Contracting Officer throughout the life of this contract. Coordination conferences will be held to discuss contract administration, Contractor quality control, phasing, scheduling, and other aspects relating to this construction. The Corps of Engineers and the Contractor will be represented at each of these meetings. Similar information concerning replacement personnel shall be forwarded to the Contracting Officer, should any replacement be required at any time during the life of this contract. Coordination conferences will be scheduled to occur on a weekly basis.

52.214-5000
52.214-5000 Apparent Clerical Mistakes

ARITHMETIC DISCREPANCIES

(a) For the purpose of initial evaluations of bids, the following will be utilized in the resolving arithmetic discrepancies found on the face of bidding schedule as submitted by the bidder:

(1) Obviously misplaced decimal points will be corrected;

(2) Discrepancy between unit price and extended price, the unit price will govern;

(3) Apparent errors in extension of unit prices will be corrected;

(4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the government will proceed on the assumption that the bidder intends his bid to be evaluated on basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

52.231-5000
52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE
MAR 1995)--EFARS
(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.
(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region _I__. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.
(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an

organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-5000

PAYMENT FOR MATERIALS DELIVERED OFF-SITE (MAR 1995) — EFARS

(a) Pursuant to FAR clause 52.232-5, Payments Under Fixed Priced Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the work site will be limited to: (1) materials required by the technical provisions; or (2) materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

(b) Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of material and labor incorporated into the item. In addition to petroleum products, payment for materials delivered off-site is limited to the following items: SEE TECHNICAL PROVISIONS

(End of clause)

52.249-5000

52.249-5000 Basis For Settlement of Proposals

BASIS FOR SETTLEMENT OF PROPOSALS

"Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

(1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.

(2) If equipment costs have been allocated to a contract using predetermined rates , those charges will be adjusted to actual costs.

(3) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.

(4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

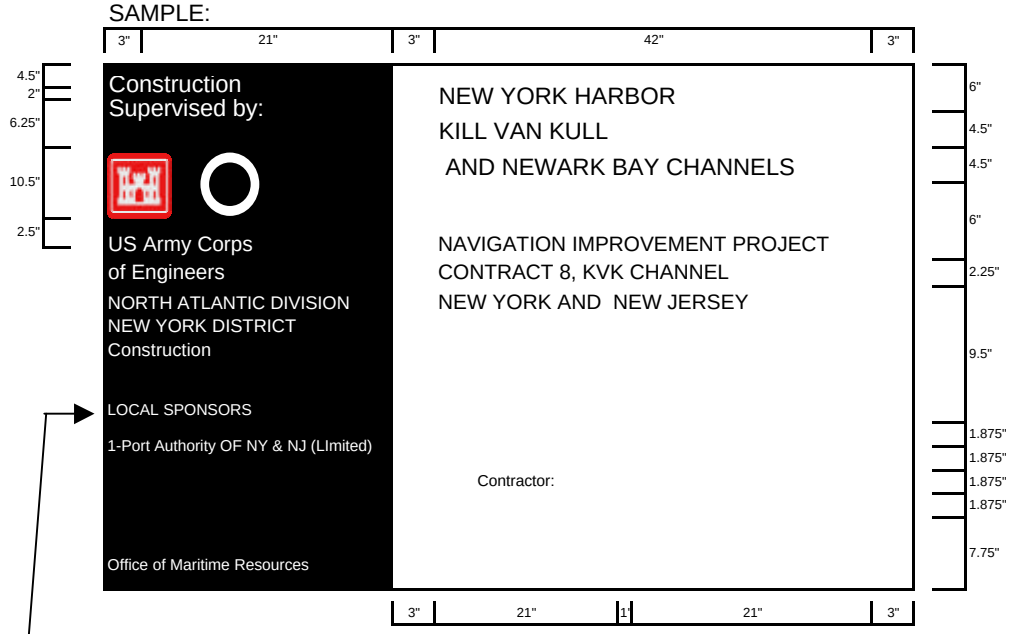
(5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate."

(End of Statement)

PROJECT IDENTIFICATION SIGN
CIVIL PROJECT

The graphic format for this 4' x 6' sign panel follows the legend guidelines and layout as specified below. The large 4' x 4' section of the panel in the right is to be white with black legend. The 2' x 4' section of the sign on the left with the full corps Signature (reverse version) is to be screen printed Communications Red on the white background. The castle insignia will be furnished by the Government in pressure sensitive vinyl for affixing by the Contractor. See attached sheet for fabrication and mounting guidelines.

SAMPLE:



(Dimensions are in inches)

Sign Type	Legend	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	various	4' x 6'	4' x 4'	HDO-3	48"	WH-RD/BK

Legend Group 1: One to two-line description of Corps relationship to project
Color: white
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 2: Division or District Name (optional, Place below 10.5" Reverse Signature (6" Castle)
Color: white
Typeface: 1.25" Helvetica Regular

Legend Group 3: One-to three-line project title legend describes the work being done under this contract.
Color: Black
Typeface: 3" Helvetica Bold
Maximum line length: 42"

Legend Group 4: One-to two-line identification of project or facility (civil works) or name of sponsoring department (military).
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Cross-align the first of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Group 5a-b: One-to-five line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.
Color: Black
Typeface: 1.25" Helvetica Regular
Maximum line length: 21"

All typography is flush left and rag right upper and lower case with initial capitals only as shown. Letter and word spacing to follow Corps standards as specified in * Appendix D

Show non-Federal local partner's name and logo -

* Refers to the U.S. Army Corps of Engineers, "Sign Standards Manual", EPS-310-1-6.

Fabrication and Mounting Guidelines

As Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location deignated by the contracting officer and shall conform to the size, format, and typographic standards shown on the attached sheets.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDD specifications provided in Appendix B. **

Sign graphics to be prepared on a white non-reflective vinyl film with positionable adhesive backing.

All graphics except for the Communications Red background with Corps signature on the project sign are to be die-cut or computer-cut non-reflective vinyl, pre-spaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on the attached sheets.

The 2'x4' Communications Red panel (to match PMS-032) with full Corps signature (reverse version) is to be screen printed on the white background. Identification of the District or Division may be applied under the signature with white cut vinyl letters prepared to Corps standards. Large scale reproduction artwork for the signature is provided on page 4.8

(photographically enlarge from

6.875" to 10.5"). **

Drill and Insert six (6) .375" T-nuts from the front face of the HDD

sign panel. Position holes as

shown. Flange of T-nut to be flush

with sign face.

Apply graphic panel to prepared HDD plywood panel following

manufacturers' instructions.

Sign uprights to be structural

grade 4"x4" treated Douglas Fir

or Southern Yellow Pine. No.1 or better. Post to be 12" long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign

panel. Countersink (.5") back of

hole to accept socket head cap

screw (4"x.375").

Assemble sign panel and uprights. Imbed assembled sign panel and

uprights in 4" hole. Local soil conditions and/or wind loading may

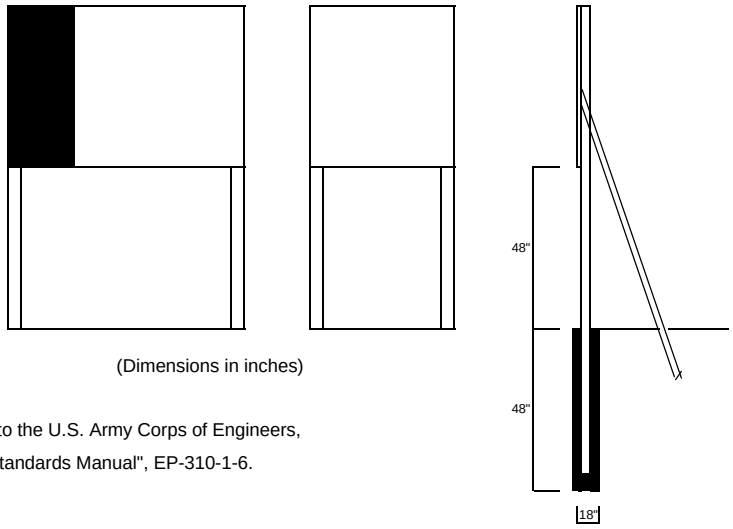
require bolting additional 2"x4"

struts on inside face of uprights to

reinforce installation as shown.

Detailed specifications for HDD plywood panel preparation are provided in Appendix B.**

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when prepring sign legend orders.



(Dimensions in inches)

** Refers to the U.S. Army Corps of Engineers, "Sign Standards Manual", EP-310-1-6.

Construction Project Sign
Legend Group 1: Corps Relationship

1.
2.

Legend Group 2: Divison/District Name

1.
2.

Legend Group 3: Project Title

1.
2.
3.

Legend Group 4: Facility Name

1.
2.

Legend Group 5a: Contractor/A&E

1.
2.
3.
4.
5.

Legend Group 5b: Contractor /A&E

1.
2.
3.
4.
5.

Safety Performance Sign
Legend Group 1: Project Title

1.
2.

Legend Group 2: Contractor/A&E

1.
2.

SAFETY PERFORMANCE SIGN

The graphic format, color, size and type-faces used on the sign are to be reproduced exactly as specified below. The title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend Group 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown. Safety record numbers are mounted on individual metal plates and are screw-mounted to the background to allow for daily revisions to posted safety performance record.

Legend Group1: Standard two-line title "safety is a Job Requirement", with (8" od.) Safety Green First Aid logo. Color: To match PMS 347
Typeface: 3" Helvetica Bold
Color: Balck

Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

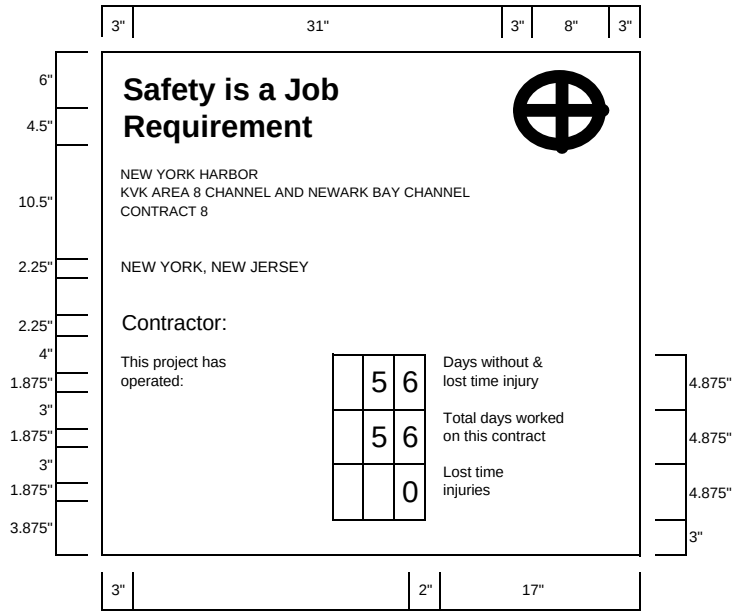
Legend Group 3: One - to two-line identification: name of prime contractor and city, state address.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 4: Standard safety record captions as shown.
Color: Black

Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060: aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5"x.5"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D. *

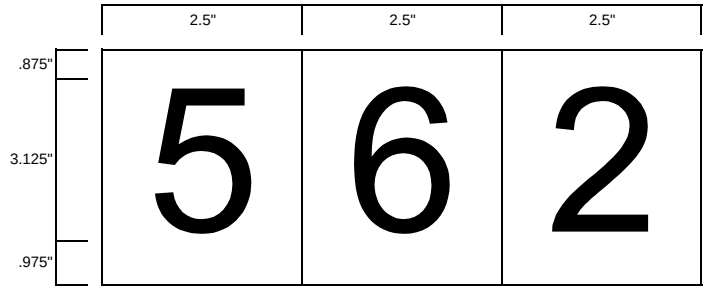


Dimensions inches.

See attached sheet for fabrication and mounting guidelines.

* Refer to the U.S. Army Corps of Engineers, "Sign Standards Manual", EPS-310-1-6.

Sign Type	Legend Size	Panel Size	Post Size	Specifications Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4"x4"	4"x4"	HDO-3	48"	WH/BK-GR



SECTION 00900

Wage Rates

Section 00900

WAGE RATE DETERMINATION

THIS PROJECT IS CLASSIFIED AS HEAVY CONSTRUCTION

NY010007
Modification Number: 8
Publication Date: 01/03/03

Labor Surplus Area: Dutchess County - **NO (**Poughkeepsie City, Dutchess Co **- YES)**

Affirmative Action GOALS:

Female: 6.9%
Minority: 6.4%

General Decision Number NY020007

General Decision Number **NY020007** sg
Superseded General Decision No. NY010007
State: New York
Construction Type:
BUILDING
HEAVY
HIGHWAY
County(ies):
DUTCHESS SULLIVAN
ORANGE ULSTER
BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartment up to and including 4 stories), HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/01/2002
1	03/08/2002
2	04/05/2002
3	05/03/2002
4	06/07/2002
5	07/12/2002
6	09/13/2002
7	10/04/2002
8	01/03/2003

9 01/31/2003
10 04/04/2003
11 04/18/2003
COUNTY(ies):
DUTCHESS SULLIVAN
ORANGE ULSTER
ASBE0040M 07/01/2002

	Rates	Fringes
SULLIVAN AND ULSTER COUNTIES		
INSULATOR/ASBESTOS WORKERS		
(includes application of all		
insulating materials, protective		
coverings, coatings and finishes		
to all types of mechanical systems	20.72	11.64
HAZARDOUS WASTE HANDLERS		
Duties limited to preparation		
wetting; stripping; removal;		
scrapping; vacuuming; bagging;		
and disposing of all insulation		
materials whether they contain		
asbestos or not from mechanical		
systems	16.57	8.25

ASBE0091M 07/01/2002

	Rates	Fringes
DUTCHESS AND ORANGE COUNTIES		
INSULATOR/ASBESTOS WORKER		
(Includes application of all		
insulating materials, protective		
coverings, coatings, and finishes		
to all types of mechanical systems)	30.32	20.09
HAZARDOUS MATERIAL HANDLER		
Duties limited to preparation,		
wetting, stripping, removal		
scrapping, vacuuming, bagging		
and disposing of all insulation		
materials; whether they contain		
asbestos or not from mechancial		
systems	22.00	8.25

BOIL0005A 09/01/2002

	Rates	Fringes
BOILERMAKER	$37.50	22.84+a

FOOTNOTE:
a. PAID HOLIDAYS: New Years Day, Thanksgiving Day, Memorial Day, Independence Day, Labor Day and Good Friday, Friday after Thanksgiving, Christmas Eve Day and New Years Eve

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BRNY0005B 06/01/2002

	Rates	Fringes
DUTCHESS, ORANGE (Excluding the town of Tuxedo), SULLIVAN and ULSTER COUNTIES		
BUILDING CONSTRUCTION		

Bricklayers, Cement Masons,
Plasterers, Stone Masons 27.11 12.20
HIGHWAY CONSTRUCTION
Bricklayers, Cement Masons,
Plasterers, Stone Masons 27.61 12.20
ORANGE COUNTY (Town of Tuxedo)
BUILDING CONSTRUCTION
Bricklayers, Cement Masons,
Plasterers, Stone Masons 32.27 13.98
HEAVY & HIGHWAY CONSTRUCTION
Bricklayers, Cement Masons,
Plasterers, Stone Masons 32.77 13.98

CARP0019A 06/01/2001
Rates Fringes
BUILDING CONSTRUCTION
Carpenters, Millwrights,
Pile Drivers 24.80 11.335
HEAVY & HIGHWAY CONSTRUCTION
Carpenters, Millwrights,
Pile Drivers 24.80 11.335

CARP0740B 01/01/2003
Rates Fringes
DUTCHESS AND ORANGE COUNTIES
MILLWRIGHTS 36.06 28.58

CARP1456C 01/01/2003
Rates Fringes
DUTCHESS AND ORANGE COUNTIES
DIVERS 43.80 24.70
DIVER TENDERS 32.40 24.70
DOCKBUILDERS 35.67 24.70

ELEC0363A 04/01/2003
Rates Fringes
ORANGE and DUTCHESS (Townships of Fishkill, East Fishkill and
Beacon) COUNTIES
ELECTRICIAN 36.00 19.16
DUTCHESS (Remaining Townships), ULSTER AND SULLIVAN COUNTIES
ELECTRICIAN 32.00 18.92

ELEC1249B 05/05/2002
Rates Fringes
LINE CONSTRUCTION (LINEMAN)
LIGHTING AND TRAFFIC SIGNAL
INCLUDING ANY AND ALL FIBER
OPTIC CABLE NECESSARY FOR THE
TRAFFIC SIGNAL SYSTEMS, AND
TRAFFIC MONITORING SYSTEMS, ROAD
WEATHER INFORMATION SYSTEMS
Lineman and Technician 28.39 8.00+6.5%+a
Groundman Digging Machine Operator 25.55 8.00+6.5%+a

Mechanic 22.71 8.00+6.5%+a
Groundman Truck Driver (Tractor Trailer Unit) 24.13 8.00+6.5%+a
Groundman Truck Driver 22.71 8.00+6.5%+a
Flagman 17.03 8.00+6.5%+a
PAID HOLIDAYS:
a. Memorial Day, New Year's Day, President's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

ELEC1249D 05/05/2002

	Rates	Fringes
LINE CONSTRUCTION:		
Substation:		
Lineman & Technician	30.01	8.00+7%+a
Cable Splicer	33.01	8.00+7%+a
Groundman digging machine Operator	27.01	8.00+7%+a
Mechanic	24.01	8.00+7%+a
Groundman truck driver (tractor trailer unit)	25.51	8.00+7%+a
Ground man truck driver	24.01	8.00+7%+a
Flagman	18.01	8.00+7%+a
Switching structures; railroad catenary installation and maintenance, third rail type underground fluid or gas filled transmission conduit and cable installations (including any and all fiber optic ground product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities), pipetype cable installation and maintenance jobs or projects, and maintenance bonding of rails; Pipetype cable installation		
Lineman & Technician	31.30	8.00+7%+a
Cable Splicer	34.43	8.00+7%+a
Groundman Digging Machine Operator	28.17	8.00+7%+a
Mechanic	25.04	8.00+7%+a
Groundman Truck Driver (Tractor-trailer unit)	26.61	8.00+7%+a
Groundman Truck Driver	25.04	8.00+7%+a
Flagman	18.78	8.00+7%+a
Overhead and underground distribution and maintenance work and all overhead and underground transmission line work including any and all fiber optic ground wire,		

fiber optic shield wire or any other
like product by any other name
manufactured for the dual purpose of
ground fault protection and fiber
optic capabilities (where no other
trades are or have been involved):
Lineman and Technician 30.01 8.00+7%+a
Cable Splicer 30.01 8.00+7%+a
Groundman digging machine operator 27.01 8.00+7%+a
Mechanic 24.01 8.00+7%+a
Groundman truck driver (tractor
trailer unit) 25.51 8.00+7%+a
Groundman Truck driver 24.01 8.00+7%+a
Flagman 18.01 8.00+7%+a
Overhead transmission line work
(where other trades are or
have been involved):
Lineman and Technician 32.51 8.00+7%+a
Cable Splicer 32.51 8.00+7%+a
Groundman digging machine operator 29.26 8.00+7%+a
Mechanic 26.01 8.00+7%+a
Groundman truck driver (tractor
trialer unit) 27.63 8.00+7%+a
Groundman truck driver 26.01 8.00+7%+a
Flagman 19.51 8.00+7%+a
TELEPHONE, CATV FIBEROPTICS
CABLE AND EQUIPMENT
Cable splicer/Central Office
Person 22.29 2.80+3%
Installer Repairman-Teledata
Lineman/Tecnician-Equipment
Operator 21.17 2.80+3%
Groundman 11.22 2.80+3%
TREE TRIMMER 16.84 3.85+3%+b
FOOTNOTE:
a. PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Good Friday, Indepenence Day, Labor Day, Thanksgiving Day, Christmas Day, and election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.
b. New Years Day, Washington's Birthday, Good Friday, Decoration Day, Independence Day, Labor Day, Veteran's Thanksgiving Day, Day after Thanksgiving Day and Christmas Day

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ELEC1249I 05/05/2002

	Rates	Fringes
SULLIVAN COUNTY		
LINE CONSTRUCTION		
LIGHTING AND TRAFFIC SIGNAL		
LINEMAN INCLUDING ANY AND ALL		
FIBER OPTIC CABLE NECESSARY FOR		

THE TRAFFIC SIGNAL SYSTEM, TRAFFIC
MONITORING SYSTEMS AND ROAD WEATHER
INFORMATION SYSTEMS..

Lineman & Technician	27.14	8.00+6.5%+a
Groundman Digging Machine Operator	24.43	8.00+6.5%+a
Mechanic	21.71	8.00+6.5%+a
Groundman Truck Driver (tractor trailer unit)	23.07	8.00+6.5%+a
Groundman Truck Driver	21.71	8.00+6.5%+a
Flagman	16.28	8.00+6.5%+a

FOOTNOTE:
a. New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, plus President's Day, Good Friday, Decoration Day, Election Day, for the President of the United States and Election Day for the Governor of the State of New York, provided the employee works the day before or the day after the holiday.

ELEV0138A 01/01/2003

	Rates	Fringes
ELEVATOR CONSTRUCTOR		
MECHANIC	37.125	12.325+a+b

FOOTNOTE:
a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.
b. PAID VACATION: Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 5 years of service, and 6% for employees with less than 5 years of service.

ENGI0106D 07/01/2002

	Rates	Fringes
NORTHERN PART OF DUTCHESS (To The Northern Boundary line of the City of Poughkeepsie)		
POWER EQUIPMENT OPERATORS HEAVY AND HIGHWAY		
GROUP 1	27.26	13.10+a
GROUP 2	26.83	13.10+a
GROUP 3	25.52	13.10+a
GROUP 4	23.35	13.10+a
GROUP 5	28.44	13.10+a
GROUP 6	27.76	13.10+a
GROUP 7	28.26	13.10+a

POWER EQUIPMENT OPERATORS HEAVY & HIGHWAY CLASSIFICATIONS
GROUP 1:-Boom Truck (over 5 tons), Crane, Cherry Picker (over 5 ton capacity), Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type) Pile Driver, Truck Crane
GROUP 2:- Automated Concrete Spreader (CMI Type), Automated Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck (5 tons and under), Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine, Self-Porpelled, Slipform, Concrete Pump

(8" or over), Dredge, Dual Drum Paver, Excavator (All Purpose-Hydraulically Operated) (Gradall or similar), Front End Loader (4 cu. yd. and over), Head Tower (Sauerman or Equal), Hoist (Two or Three drum), Holland Loader, Mine Hoist, Mucking Machine or Mole, Pavement Breaker (SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.), Quad 9, Quarry Master (or equivalent), Scraper, Shovel, Side Boom, Slip Form Paver, Tractor Drawn Belt-type loader, Truck or Trailer Mounted Log Chipper (Self feeder), Tug Operator (Manned Rented Equpment excluded), Tunnel Shovel

GROUP 3 - Asphalt Paver, Backhoe (Tractor Mounted, Rubber Tired), Bituminous Spreader and Mixer, Blacktop Plant (Non-Automated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage-Hoist, Central Mix Plant (Non-Automated) and All Concrete Batching Plants, Cherry Picker (5 Tons Capacity and Under), Compressors (4 or less) Exceeding 2000 C.F.M. Combined Capacity, Concrete Paver (over 16S), Concrete Pump (Under 8"), Crusher, Diesel Power Unit, Drill Rigs (Tractor Mounted), Front End Loader (under 4 c.y.), Hi-Pressure - Boiler (15 lbs. and over), Hoist (One Drum) Kolman Plant Loader and Similar Type Loaders, L.C.M. Work Boat Operator, Locomotive, Maintenance Engineer/Greaseman/ Welder, Mixer (For Stabilized Base Self-Propelled), Monorail Machine, Plant Engineer, Pug Mill, Pump Crete, Ready Mix Concrete Plant, Refrigeration Equipment (For Soil Stabilization), Road Widener, Roller (All Above Subgrade), Sea Mule, Self-contained Ride-on-Rock Drill, excluding Air Track Type Drill, Skidder, Tractor With Dozer and/or Pusher, Trencher, Tugger-Hoist, Vermeer saw (ride on, any size or type), Winch, Winch Cat.

GROUP 4 - A-Frame Winch Hoist on Truck, Ballast Regulator (Ride-On), Compressors (4 not to exceed 2000 C.F.M. Combined Capacity; or 3 or less with more than 1200 C.F.M. but not to exceed 2000 C.F.M.), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (4 of Any Type Of Combination), Concrete Pavement Spreaders and Finishers, Conveyor, Directional Drill Machine Locator, Drill Core, Drill Well, Electric Pump Used In Conjunction with Well Point System, Farm Tractor with Accessories, Fine Grade Machine, Fork Lift (under 15 ft.), Grout Pump Gunite Machine, Hammers (Hydraulic-Self-Propelled), Hydra-Spiker (Ride-On), Hydro-Blaster Water, Post Hole Digger and Post Driver, Power Sweeper, Roller (Grade and Fill), Scarifier (Ride-On Spansaw (Ride-On), Skid Steer loader (Bobcat or similar), Sumbersible Electric Pump (When Used In Lieu Of Well Point System), Tamper (Ride-On), Tie Extractor (Ride-On), Tie Handler, Tie Inserter (Ride-On), Tie Spacer (Ride-On), Tire Repair, Track Liner, Tractor With Towed Accessories, Vibratory Compactor, Vibro Tamp, Well Point, Aggregate Plant, Boiler (Used In Conjunction With Production), Cement and Bin Operator, Compressors (3 or less not to Exceed 1200 C.F.M. Combined Capacity), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (3 or less of Any Type or Combination), Concrete Paver or Mixer (16S and under), Concrete Saw (Self-Propelled), Fireman, Form Tamper, Hydraulic Pump (Jacking System), Light Plants, Mulching Manchine, Oiler, Parapet-Concrete or Pavement Grinder, Power Broom (Towed),

Power Heaterman, Revinius Widener, Shell Winder, Steamcleaner,
Tractor.
GROUP 5 - Master Mechanic
GROUP 6 - Crane Premium with Boom Length and Jib 150' - 199'
GROUP 7 - Crane Premium with Boom Length and Jib 200' and Over.
Tower Crane Premium $ .50
Hazmat work premium $2.50
Hydrographic $ .50
FOOTNOTES:
a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence
Day, Labor Day, Thanksgiving Day, Christmas Day, provided the
employee works the day before and the day after the holiday.

ENGI0106M 05/01/2002

	Rates	Fringes
NORTHERN PART OF DUTCHESS (TO THE NORTHEN BOUNDARY LINE OF THE CITY OF POUGHKEEPSIE) BUILDING CONSTRUCTION		
POWER EQUIPMENT OPERATORS:		
GROUP 1:	23.67	12.15+a
GROUP 2:	25.64	12.15+a
GROUP 3:	23.64	12.15+a
GROUP 4:	23.24	12.15+a
GROUP 5:	22.57	12.15+a
GROUP 6:		
1	25.99	12.15+a
2	26.34	12.15+a
3	27.14	12.15+a
4	27.64	12.15+a
5	28.14	12.15+a
GROUP 7		
1	26.14	12.15+a
2	27.14	12.15+a
3	27.64	12.15+a
4	28.14	12.15+a
GROUP 8	23.92	12.15+a
GROUP 9	26.14	12.15+a

Hazardous work - Anytime Operating Eningeers
are involved with level C or above, $2.50 per
hour over regular rate.
FOOTNOTE:
a. Paid Holiday: New Years Day, Memorial Day, Independence Day
Labor Day, Thanksgiving Day, Christmas Day,
POWER EQUIPMENT OPERATOR CLASSIFICATIONS
GROUP 1: Self-contained crawler drill, hydraulic rock drill.
GROUP 2: Crane, hydraulic cranes, tower crane, locomotive crane,
piledriver, cableway, derricks, whirlies, dragline, boom truck
(over 5 tons)
GROUP 3: Shovel, All backhoe (except tractor mounted rubber
tired John Deere 510 or smaller), gradalls, power road grader,
all CMI equipment, front-end rubber tire loader, tractor-mounted
drill (quarry master), mucking machine, concrete central mix
plant, concrete pump, Belcrete system, automated asphalt concrete
plant and tractor road paver, boom truck (5 tons and under).

GROUP 4: Backhoe, (tractor mounted rubber tired equivalent to John Deere 510 or less), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, road roller, blacktop roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydrohammer, concrete spreader, concrete finishing machine, one drum hoist, power hosting (single drum), hoist - two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, cord and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinkey locomotive, skid steer loader, track excavator 5/8 cu. yd. or smaller.
GROUP 5: Fork lift, high lift, lull, Oiler, fireman and heavy-duty greaser, boilers, and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, concrete pumps, electric submersible pump 4" and over, murphy type diesel generator, conveyor, elevators, concrete mixer and belcrete power pack (belcrete system), seeding, and mulching machines, pumps.
GROUP 6: Boom length premiums over GROUP II rates:

1	over 130 ft	.35
2	over 185 ft	.70
3	over 210 ft	1.50
4	over 250 ft	2.00
5	over 295 ft	2.50

GROUP 7: Tower Crane Premium over GROUP II rates:

1	over 5 stories	.50
2	over 10 stories	1.50
3	over 15 stories	2.00
4	over 20 stories	2.50

GROUP 8: Master Mechanic (other than nuclear work)
GROUP 9: Master Mechanic on nuclear work

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* ENGI0137B 03/03/2003

DUTCHESS COUNTY (POUGHKEEPSIE AND SOUTH THERE-OF)

	Rates	Fringes
BUILDING CONSTRUCTION		
POWER EQUIPMENT OPERATORS:		
GROUP 1-A	34.15	17.33+a
GROUP 1-B	31.55	17.33+a
GROUP 2-A	33.01	17.33+a
GROUP 3-A	31.81	17.33+a
GROUP 3-B	30.30	17.33+a
GROUP 4-A	31.50	17.33+a
GROUP 4-B	29.00	17.33+a
GROUP 5-A	30.30	17.33+a
GROUP 5-B	28.74	17.33+a
GROUP 6-A-1	35.87	17.33+a
GROUP 6-A-2	34.77	17.33+a
GROUP 6-A-3	33.58	17.33+a
GROUP 6-A-4	35.05	17.33+a

GROUP 6-A-5	39.56	17.33+a
GROUP 6-A-6	31.19	17.33+a
GROUP 6-A-7	39.00	17.33+a
GROUP 6-B-1	27.29	17.33+a
GROUP 6-B-2	28.59	17.33+a
GROUP 6-B-3	28.64	17.33+a
GROUP 6-B-4	27.70	17.33+a
GROUP 6-B-5	31.29	17.33+a

NOTES: Hazmat: 20% above regular rage
Pumping operation Premium .50
Crane Operators (100-149 ft) 2.00
Crane Operators (149 ft +) 3.00
Loader Operators (over 5 cu yd) .50
Shovel Operators (over 4 cu yd) 1.00

FOOTNOTE:

a. New Years Day, Memorial Day, Independence Day, Labor Day Thanksgiving Day, Christmas Day, plus Lincoln's Birthday, Washington's Birthday, Good Friday, Columbus Day, November Election Day, Veteran's Day.

POWER EQUIPMENT OPERATORS CLASSIFICATION

GROUP 1-A: Carrier- trailer horse; concret-portable hoist; crane & hoist engineer-steel (concrete, material, super structure sub-structure); derrick (stone-steel); elevator & cage; hoist-single/double or triple drum; hoist-portable mobile unit; hoist engineer-concert (crane-derrick-mine hoist); hoist engineer-material; overhead crane; power house plant; telephies (cableway); whirly; maintenance engineer; Lull hilift or similar; hydraulic crane 25 ton and over; cherry picker 25 tons and over; backhoe Oliver 88; fordson; dynahoe; dual purpose and similar machines; Barber Green Loader-euclid loader or similar type; conway or similar mucking macking machines; dragline; gradall; shovel; backhoe etc. (crawler or truck); front end loaders; hydraulic boom; jersey spreader; lift slab console; letournequ or tounapull (scrapers over 20 yds struck); mucking machines; pavement breaker (air ram); paver (concrete); road boring machine; road mix machines; ross carrier and similar machines; post hole digger; shovel (tunnels); side boom; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yds. trenching machines vermeer concrete saw trencher and similar; tractor type demolition equipment; winch truck (a frame); hydraulic crane over 10 ton up to 25 ton); cherry picker over 10 ton up to 25 ton)

GROUP 1-B: Compressor (steel erection); pulse meter and push button buzz box; elevator; mechanic (outside) all types; welder; scrapers 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers; roller 4 tons and over.

GROUP 2-A: Compactor self-propelled; grader; bulldoze D7 and similar tractors with a draw bar horsepower of 100 or over; bulldozer D6 and under; welder; scraper 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers.

GROUP 3-A: Asphalt plant; boiler (high pressure); concrete mixing plants; concrete pump; firemen; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes); mixer concrete -

21E and over; portable asphalt plant; portable batch plant; portable crusher; quarry master; stone crusher; well drilling machine and well point system; cherry picker under 10 tons; hydraulic crane under 10 tons; concert buffy; one yard an up ride on dumper (benford or similar).
GROUP 3-B: Compressor over 125 cu. feet; conveyor belt machine regardless of size; lighting unit (portable & generator); welding machine (steel erection and excavation); and compressor plant; stud machine; ladder hoist.
GROUP 4-A: Air tractor drill; batch plant; bending machine; concrete breaker; concrete spreader; curb cutter machine; farm tractor (all types); finishing machine-concrete; hepavac clean air machine (all similar types: removal of asbestos etc.); material hopper-sand-stone-cement; mixer-concrete-under 21E; mulching grass spreader; pump -gypsum, etc., pump -plaster-grout -fireproofing; shop mechanic (not employed on job site); roller under 4 ton; spreading and fine grading machine; steel cutting machine; syphon pump -air-steam; tar joint machine; turbo jet burner or similar equipment; vibrator (1 to 5); fine grading machine; roof hoist (tugger hoist); television cameras-water-sewer-gas-etc.
GROUP 4-B: Compressor to 135 feet; dust; dust collector; heater all types; pump; pump station (water and sewer); steam jenny; sweeper; chipper; mulcher.
GROUP 5-A: Concrete saw; oiler fuel truck and oiler grease truck.
GROUP 5-B: Oiler; paint compressor; motorized roller (walk behind); stockroom attendant.
GROUP 6-A-1: master mechanic.
GROUP 6-A-2: helicoptor hoist operator.
GROUP 6-A-3: welder-certified.
GROUP 6-A-4: engine-pile driver.
GROUP 6-A-5: helicopter-pilot
GROUP 6-A-6: helicopter-signalman
GROUP 6-A-7: Engineers for all tower cranes, all climbing cranes and all cranes of 100 ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged (except for pile rigs).
GROUP 6-B-1: Utility man.
GROUP 6-B-2: warehouse man.
GROUP 6-B-3: oiler (asphalt paver)
GROUP 6-B-4: cable splicer.

ENGI0137C 03/03/2003

	Rates	Fringes
DUTCHESS (Poughkeepsie and South thereof)		
POWER EQUIPMENT OPERATORS (HEAVY & HIGHWAY)		
GROUP 1	39.00	17.53+a
GROUP 1-A	34.54	17.53+a
GROUP 1-B	35.73	17.53+a
GROUP 2-A	33.14	17.53+a
GROUP 2-B	33.27	17.53+a
GROUP 3	32.58	17.53+a

GROUP 4-A	29.74	17.53+a
GROUP 4-B	25.74	17.53+a
GROUP 5-A-1	36.49	17.53+a
GROUP 5-A-2	35.40	17.53+a
GROUP 5-A-3	43.98	17.53+a
GROUP 5-A-4	39.40	17.53+a
GROUP 5-A-5	34.10	17.53+a
GROUP 5-A-6	40.09	17.53+a
GROUP 5-A-7	32.98	17.53+a
GROUP 5-A-8	33.28	17.53+a
GROUP 5-B-1	24.56	17.53+a
GROUP 5-B-2	27.90	17.53+a
GROUP 5-B-3	24.20	17.53+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS (HEAVY & HIGHWAY)
GROUP 1: Boom Truck; Cherry Picker; Clamshell; Crane, (Crawler, Truck); Dragline; Rough Terrain Crane
GROUP 1-A: Auger; Auto Grader; Dynahoe and Dual purpose and similar machines; Boat Captain; Boring Machine (all types); Bull Dozer- all sizes; Central Mix Plant Operator; Chipper-all types; Close circuit t.v.; Compactor with Blade; Concrete Portable Hoist; C.M.I. or similar; Conway or similar mucking machines; Gradall, Shovel Backhoe, etc. Grader; Derrick, (Stone- Steel; Elevator & cage, materials or passengers; Front end loaders over 1 1/2 yds.; Hoist Single, Double, Triple Drum, Hoist Portable Mobile Unit; Hoist Engineer-Concrete (Crane-Derrick-Mine Hoist); Hoist Engineer-Material, Hydraulic Boom; Letourneau or Tournapull (Scrapers over 20 yds. struck); Log Skidder; Movable Concrete Barrier Transfer & Transport Vehicle; mucking machines; overhead crane; paver (conccrete); pulsemeter; push button (buzz box) elevator; road mix machines; Robot Hammer (brock or similar), Ross carrier and similar machines;shovels (tunnels); side boom; Slip Form Machine; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yards; trenching machines; telephies-vermeer concrete saw trencher and/or similar; tractor-type demolition equipment, Whirly
GROUP 1-B: Road Paver, Asphalt
GROUP 2-A: Balast Regulators; Compactor self-propelled; Cow Tracks; Fusion Machine; Rail Anchor Machines; Roller 4 ton and over; Scrapers - 20 yards struck; Switch Tampers; Vibratory roller, etc.
GROUP 2-B: Mechanic (outside) all types
GROUP 3-A: Air tractor drill; asphalt plant; batch plant; boiler (high pressure; concrete breaker; concrete pump concrete spreader; curb cutter machine; farm tractor (all types); finishing machine (concrete); fine grading machine; fireman; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes), maintenance engineer; machine pulling sheeps foot roller; material hopper; mixer concrete - 21-E and over; mulching grass spreader; portable asphalt plant, portable batch plant, portable crusher; powerhouse plant; quarry master; roller under 4 ton; spreading and fine grading machine; steel cutting machine; stone crusher; sweeper; turbojet burner or similar; well drilling

machine ; winch truck "A" frame.
John Henry Drill or similar.
GROUP 4-A: Service men (fuel or grease truck).
GROUP 4-B: Oiler; Compressor - compressor plant; paint compressor -steel erection; conveyor belt machine; lighting unit (portable & generator); oiler; pumps - pump station-water-sewer-gypsum- plaster, etc.; roller-motorized (walk-behind); welding machine (steel erection excavation); well point system; bending machine; dust collector; mixer - concrete under 21-E; heater all types; steam jenny; syphon pump -air-steam; tar joint machine; vibrator (1 to 5); Compressor Truck Mounted (2-6)
GROUP 5-A-1: Master Mechanic
GROUP 5-A-2: Helicopter hoist operator.
GROUP 5-A-3: Engineer - all tower cranes, all climbing cranes and all cranes of 100 ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged (except for pile rigs).
GROUP 5-A-4: Hoist Engineer - steel - sub-structure; Engineer--Pile Driver
GROUP 5-A-5: Welder-Certified
GROUP 5-A-6: Helicopter - pilot.
GROUP 5-A-7: Helicopter - signalman.
GROUP 5-A-8: Jersey-spreader, pavement breaker (air ram); Post Hole Digger
GROUP 5-B-1: Utility Man
GROUP 5-B-2: Concrete Saw
GROUP 5-B-3: Oiler
NOTES:
Loader Operator (over 5 cu yds) .50
Shoval Operators (over 4 cu yd) 1.00
Hazmat premium over regular rate 20%
FOOTNOTE:
a. PAID HOLIDAYS: New Year's Day; Lincoln's Birthday; Good Friday; Memorial Day; Independence Day; Labor Day; Veterans Day; Columbus Day; November Election Day; Thanksgiving Day; and Christmas Day

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ENGI0825K 07/01/2002

	Rates	Fringes
ORANGE, ULSTER AND SULLIVAN COUNTIES		
POWER EQUIPMENT OPERATORS (BUILDING HEAVY & HIGHWAY):		
GROUP 1	32.87	17.15+a
GROUP 2	31.28	17.15+a
GROUP 3	29.37	17.15+a
GROUP 4	27.74	17.15+a
GROUP 5	26.03	17.15+a
GROUP 6	34.69	17.15+a

NOTES:
Hazmat Premium 20%
Hydrographic Premium .50
POWER EQUIPMENT OPERATORS CLASSIFICATIONS (BLDG, HEAVY & HWY)
GROUP 1: Autograde-Pavement-Profiler (CMI and Similar Type); utograde-Pavement-Profiler (CMI and Similar Types);Autograde

Slipform Paver (CMI and Similar Types); Backhoe; Central Power Plants (all types); Concrete Paving Machine (s-240 and Similar Types); Cranes (All Types, Including Overhead and Straddle Traveling Type); Cranes, Gantry; Derricks (Land, Floating or Chicago Boom Type); Drillmaster/Quartmaster (Down the Hole Drill) Rotary Drill; Self-Propelled, Hydraulic Drill, Self-Powered Drill Draglines, Elevator Graders, Front End Loaders (5 yds. and over), Gradalls, Grader: Rago, Helicopters (Copilot), Helicopters, (Communication Engineer), Locomotive (large), Mucking Machines, Pavement and Concrete Breaker (Superhammer, Hoe Ram, Brokk 250 and Similar Types), Pile Driver (length of boom including length of leads shall determine premium rate applicable), Roadway Surface Grinder Scooper (loader and shovel), Shovels, Tree Chooper with Boom, Trench Machines, Tunnel Boring Machines.
GROUP 2: "A" Frame; Backhoe (Combination); Boom Attachment on Loaders (Rate based on size of bucket) not applicable to Pipehook) Boring and Drilling Machines, Brush Chopper, Shredder and Tree Shredder Tree Shearer, Cableways, Carry-alls, Concrete Pump, Concrete Pumping System, Pumpcrete and Similar Types, Conveyors, 125 ft and over; Drill Doctor (duties include dust collector, maintenance), Front End Loader (22 yds. but less than 2 yds.), Graders (Finish); Groove Cutting Machine (ride on type), Heater Planer; Hoists: (all type hoists, Shall Also Include Steam, Gas, Diesel, Electric, Air Hydraulic, Single and Double Drum, Concrete, Brick Shaft, Caisson, Snorkel Roof, and or any other similar type Hoisting Machines, Portable or Stationary, Except Chicago Boom Type). Long Boom Rate to Be Applied if Hoist is "outside material lower hoist"; Hydraulic Cranes-10tons and Under; Hydro-Axe; Hydro-Blaster; Jacket (Screw Air Hydraulic Power Operated Unit or Console Type: Not Hand Jack or Pile Load Test Type), Log Skidder; Pans, Pavers (all) Concrete; Plate and Frame Filter Press; Pumpcrete Machines; Squeeze Crete and Concrete Pumping (regardless of size); Scrapers; Sidebooms; Straddle Carrier, Ross and Similar Types; Vacuum Truck; Whip Hammer; Winch Trucks (Hoisting).
GROUP 3: Asphalt Curbing Machine, Asphalt Plant Engineer, Asphalt Spreader; Autograde Tube Finisher & Texturing Machine (CMI and Similar types) Autograde Curecrete Machine (CMI and Similar Types); Bar Bending Machines (power), Batchers, Batching Plant and Crusher on-site; Belt Conveyor Systems; Boom Type Skimmer Machines; Bridge Deck Finisher; Bulldozers (all); Car Dumpers (A:road); Chief of Party; Compressor and Blower Type Units (used) Independenty or Mounted On Dual Purpose Trucks, On Job Site or In Conduction with Job Site, In Loading and Unloading of Concrete, Cement, Fly Ash, Instantcrete, or Similar Type Materials); Compressor 92 or 3 in Battery); Concrete Finishing Machines; Concrete Saws and Cutters (ride on type); Concrete Spreaders, Hetzel, Rexomatic and Similar types; Concrete Vibrators; Conveyors, Under 125 ft), Crushing Machines, Ditching Machine, Small (ditchwitch, Vermeer or Similar type); Dope Dots (mechanical with or without pump), dumpsters; Elevator; Fireman; Forklifts (economobile, lull, and similar types of equipment); Front End Loaders (1 yd. and over but less than 2 yds.);

Generators (2 or 3 in Battery/ within 100 ft); Giraffe Grinders, Graders and Motor Patrols; Grout Pump; Gunnite Machines (excluding nozzle); Hammer Vibratory (in conduction with generators); Hoists (Roof, Tuggeraerial Platfrom Hoist and House Cars), Hoppers, Hoppers Doors (power operated); Hydro-Blaster (where required); Ladders (Motorized); Laddervator; Locomotive, Dinky type; Maintenance, Utility Man; Mechanics; Mixers (Excepting Paving Mixers); Motor Patrols and Graders; Pavement Breakers, Small, Self-Propelled ride on type (also maintains compressor or hydraulic unit); Pavement Breaker, Truck Mounted; Pipe Bending Machine (power); Pitch Pump; Plaster Pump (regardless of size); Post Hole Digger (post pounder and auger); Rod Bending Machines (power); Roller, Black Top; Scales, (power); Seaman Pulverizing Mixer; Shoulder Widener; Silos; Skimmer Machines (Boom Type); Steel Cutting Machine, Services and Maintains; Tamrock Drill; Tractors; Tug Captain; Vibrating Plants (used in conduction with unloading); welder and Repair Machines. Concrete cleaning/decontamination machine operator; Directional boring machine; Heavy equipment robotics operator; Master environmental maintenance operator; Ultra high pressure waterjet cutting tool system operator; maintenance operator; Vacuum blasting machine operator

GROUP 4: Brooms and Sweepers; Chippers; Compressors (single); Concrete Spreaders (small type); Conveyor Loaders (not including Elevator Graders); Engines, Large Diesel (1620 h.p.) and Staging Pump; Farm Tractors; Fertilizing Equipment (Operator and Maintenance of); Fine Grade Machine (small type); Form Line Graders (small type); Front End Loader (under 1 yd); Generator (single); Grease, Gas, Fuel and Oil Supply Trucks; Heaters (Nelson or Other Type Including Propane, Natural Gas or Flowtype Units); Lights, Portable Generating Light Plants; Mixers, Concrete Small; Mulching Equipment (Operation and Maintenance of); Pumps (2 of Less Than 4 Inch Suction); Pumps 94 Inch Suction and Over Including Submersible Pumps); Pumps (Diesel Engine and Hydraulic); Immaterial of Power; Road Finishing Machines (Small Type); Rollers, Grade, Full Or Stone Base; Seeding Equipment (Operation and maintence of); Sprinkler and Water Pump Trucks (Used on job Site or in conduction with Job Site); Steam Jennies and Boilers, Irrespective of Use; Stone Spreader; Tamping Machines, Vibrating Ride On; Temporary Heating Plant (nelson or Other Type, Including Propane, Natural Gas or Flow Type Units); Water and Sprinkler Trucks (Used On Job Site In Conduction with Job Site); Welding Machines-Within 100 ft (Gas, and /or Electric Converters of any type, single, tow or three in a battery). welding system, multiple (rectifier transformer type) well point systems (including installation by bull gang and maintenance of); Off Road back dumps.

GROUP 5: Oiler

GROUP 6: Helicopter Pilot

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, Washington's Birthday Memorial Day, July 4th, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day, provided the

employee works one day during the calendar week in which the holiday occurs

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ENGI0825L 07/01/2001

	Rates	Fringes
ORANGE, ULSTER AND SULLIVAN COUNTIES		
POWER EQUIPMENT OPERATORS		
BUILDING CONSTRUCTION STEEL ERECTION		
GROUP 1	34.64	16.20+a
GROUP 2	33.73	16.20+a
GROUP 3	31.44	16.20+a
GROUP 4	28.78	16.20+a
GROUP 5	27.25	16.20+a
GROUP 6	25.49	16.20+a
GROUP 7	35.50	16.20+a

NOTES:

Hydrographic Premium	.50
Hazmat Premium	20%
Tunnel Premium	.75

STEEL ERECTION CLASSIFICATIONS

GROUP 1: Cranes (All Cranes, Land or Floating with Booms Including Jib 140 ft and over, Above Ground); Derricks, Land, Floating or Chicago Boom Type with Booms including Jib 140 ft and over above ground).

GROUP 2: Cranes (All Cranes, Land or Floating with Booms Including Jib Less Than 140 ft Above Ground); Derricks, Land, Floating or Chicago Boom Type with Booms Including Jib Less Than 140 ft above Ground).

GROUP 3: "A" Frame, Cherry Pickers 10 tons and under, Hoists Shall Also Include Steam, Gas, Desel, Electric, Air Hydraulic, Single and Double Drum Concrete, Brick Shaft Caisson, or Any Other Similar Type Hoisting Machines, Portable or Stationary, Except Chicago Boom Type; Jacks: Screw Air Hydraulic Power Operated unit or Console Type (not hand Jack or Pile Load Test Type); Side Booms.

GROUP 4: Aerial Platform used as Hoist; Compressor: 2 or 3 in Battery; Elevators or House Cars; Conveyors and Tugger Hosits; Chief of Party; Firemanp; Forklift; Generators (2 or 3); Maintenance (Utility Man); Rod Bending Machine (power); Welding Machines (Gas or Electric, 2 or 3 in Battery, Including Diesels); Captain: Power Boats: Tug Master: Power Boats.

GROUP 5: Compressor, Single; Welding Machine, Single, Gas, Diesel, and Electric Converters of any Type: Welding System Multple (Rectifier Transformer Type); Generator, Single.

GROUP 6: Oiler

GROUP 7: Helicopter Pilot .

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee works one day in the calendar week during which the holiday occurs.

POWER EQUIPMENT OPERATORS
BUILDING CONSTRUCTION TANK ERECTION

GROUP 1	34.36	16.20+a
GROUP 2	33.52	16.20+a
GROUP 3	35.00	16.20+a
GROUP 4	31.43	16.20+a
GROUP 5	26.22	16.20+a

NOTES:

Tunnel Premium	.75
Hazmat Premium	20%
Hydrographic Premium	.50

TANK ERECTION CLASSIFICATIONS

0
1 GROUP 1: Operating Engineers on all Cranes, Derricks, ets with
2 Booms Including Jib 140 ft or More Above Ground.
3
4 GROUP 2: Operating Engineer on all Equipment, Including Cranes,
5 Derricks, ets with Booms Including Jib, Less Than 140 ft above
6 the ground.
7
8 GROUP 3: Helicopter Pilot Engineer.
9
0 GROUP 4: Air Compressors, Welding Machines and Generators are
1 Covered and are Defined as Cover: Gas, Diesel, or Electric Driven
2 Equipment and Sources of Power from a Permanent Plant: ie: Staem,
3 Comgressed Air, Hydraulic or Other Power, For The Operating of
4 any Machine or Automatic Tools, Used In The Erection, Alteration,
5 Repair and Dismantling of Tanks and Any and All "Dual Purpose"
6 Trucks Used On The Construction Job Site, or in the Loading and
7 Unloading of Materials, at the Construction Job Sited or in
8 Conjuction with the Job Site.
9
0 GROUP 5: Oiler
1
2 FOOTNOTE:
3 a. PAID HOLIDAYS: New Years Day, Washington's Birthday,
4 Memorial Day, Independence Day, Labor Day, Veteran's Day,
5 Election Day, Thanksgiving Day, and Christmas Day provided
6 the Employee works one day in the calendar week during
7 which the holiday occurs
8
9 ----------
0 POWER EQUIPMENT OPERATORS
1 OILOSTATIC MAINLINES AND TRANSPORTATION PIPE LINES:
2

3 GROUP 1	32.50	16.20+ a
4 GROUP 2	30.85	16.20+ a
5 GROUP 3	28.71	16.20+ a
6 GROUP 4	27.21	16.20+ a
7 GROUP 5	25.49	16.20+ a
8 GROUP 6	34.43	16.20+ a

9
0 NOTES:

Hydrographic Premium .50
Hazmat Premium 20%
Tunnel Premium .75

OILSTATIC MAINLINES AND TRANSPORTATION PIPE LINES
CLASSIFICATIONS

GROUP 1: Backhoe; Cranes (all types); Draglines, Front End Loaders (5yds. and over), Gradalls, Helicopters (co-pilot), Helicopters (Communication Engineer); Scooper (Loader and Shovel) Koehring; Trench Machines.

GROUP 2: "A" Frame; Backhoe (Combination Hoe Loader); Boring and Drilling Machines; Ditching Machines, Small, Ditchwitch, Vermeer or Similar type; Forklifts; Front End Loaders 92 yds. and over but less than 5 yds.); Graders, Finish (fine); Hydraulic Cranes 10 tons and under (over 10 tons) Cranes Rate Applies); Side Booms: Winch Trucks (Hoisting).

GROUP 3: Backfiller; Brooms and Sweepers; Bulldozers; Compressor (2 or 3 in battery); Chief of Party; Front End Loaders (under 2 yds); Generators; Giraffe Grinders; Graders and Motor Patrols; Machnic; Pipe Bending Machine (power);Tractors; Water and Sprinkler Trucks used on Job Site or in Conduction with Job Site); Welder and Repair Mechanic; Captain (power boats); Tug Master (power boats).

GROUP 4: Compressor (single); Dope Pots (Mechanical with or without Pump); Dust Collectors; Pumps (4 inch suction and over); Pumps (2 of less than 4 inche suction); Pumps, Diesel Engine and Hydraulic (immaterial of power); Welding Machines, Gas or Electric Converters of any type- 2 or 3 in Battery Multple Welders; Well Point Systems (including installation and Maintenance); Fram Tractors.

GROUP 5: Oiler, grease, gas, fuel and oil supply trucks; Tire repair and maintenance

GROUP 6: Helicoter Pilot

FOOTNOTE:
a. Paid Holidays: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day Provided the Employee works one day in calendar week during which

the holidays occurs.

IRON0417A 07/01/2002

	Rates	Fringes
IRONWORKERS	31.30	19.05

4
5 LABO0017M 07/01/2002
6 Rates Fringes
7 ORANGE, ULSTER, AND
8 SULLIVAN COUNTIES
9
0 LABORERS
1
2 BUILDING CONSTRUCTION:
3
4 GROUP 1 20.30 11.10
5 GROUP 2 23.55 11.10
6 GROUP 3 25.35 11.10
7 GROUP 4 28.10 11.10
8
9 LABORERS BUILDING CLASSIFICATIONS
0
1 GROUP 1: Custodial work, flag person, portable generator tender,
2 portable pump tender, pitman and dumpman, firewatch, temporary
3 heat tender, temporary light tender, traffic control, tool room
4 tender
5
6 GROUP 2: Artificial turf, air chipping hammer acoustic pump and
7 mixer, carpenter tender, concrete, concrete curb and sidewalk
8 form setter, concrete form stripping, concrete sealing, concrete
9 curing, concrete finisher, concrete vibrator, compressor, clean
0 up after trades, dismantling demolition, excavation,
1 fireproofing, foundation and building piping, pump and mixer,
2 gunite, general clean up, grade checker, grading and backfilling,
3 hoists, hod carrier, landscaping, mason tender, multi building
4 trades tender, jackhammer, pavement breaker, poured gypsum roof
5 work, power tampers, power walk behind roller, pressure blasting,
6 power mixer, scaffolding, snow removal, signal person,
7 sandblasting, styrofoam and similar installation, radio control
8 equipment including but not limited to radio control tampers and
9 rollers, radio control excavator, all erecting and dismantling of
0 scaffold for masonry regardless of height, walking and riding
1 power buggies, temporary weather protection, wrecking,
2 waterproofing, stone and tile setter, radio controlled hammers
3 and breakers, unloading of trucks, air track, assembling and
4 placing gabion baskets, asphalt, blaster, bob cat type machine
5 for demo and clean up, chain link fence, chain saw, chipping
6 hammer, concrete conveyor belt, saw, core drill, corrugated pipe,
7 construction specialist, cleaning machine, concrete form setter,
8 conduit layer, cutting torch, discharge pipe, drill chuck tender,
9 duct bank layer, explosive handler, hydraulic splitter, granite
0 or stone curbing, handler, joy and jib drill, IngersollRand heavy
1 duty crawler master type HCMZ drill machines or equivalent, laser
2 level, nonmetallic pipe layer, metallic pipe layer, LeRoi
3
4 hydraulic drill or similar, mega mixer, power fork lift,
5 prestressed and precast concrete, power brush cutter, pump crete
6 machine, retaining walls, rip rap, retention and toxic and

hazardous waste liners, setting of block, setting of block,
setting of brick, setting of stone, sound barriers, transit under
laborers jurisdiction, tow behind concrete or grout pump, traffic
and pedestrian stripping, surface planner, manufactured curb,
walk behind durface planner, wagon drill, welding

GROUP 3: Forklift for masonry purposes

GROUP 4: Asbestos Abatement work, toxic and hazardous abatement,
lead abatement work, environmental work.
DUTCHESS COUNTY (Asbestos, lead, toxic and hazardous waste
abatement and any other environmental related
work)

BUILDING CONSTRUCTION

GROUP 1:	23.55	11.10
GROUP 2:	28.10	11.10

BUILDING CLASSIFICATIONS

GROUP 1: Asbestos abatement work, lead abatement work, toxic and
hazardous waste related work; when protective equipment and
clothing are not required.

GROUP 2: Asbestos abatement work, toxic and hazardous abatement,
lead abatement work, environmental work.

ORANGE, ULSTER AND SULLIVAN
COUNTIES

LABORERS HEAVY & HIGHWAY:

GROUP 1:	20.20	11.50+a
GROUP 2:	25.60	11.50+a
GROUP 3:	30.20	11.50+a
GROUP 4:	31.20	11.50+a

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, President's Day, Memorial Day,
Independence Day, Labor Day, Election Day, Veterans Day,
Thanksgiving Day, Christmas Day

LABORERS HEAVY AND HIGHWAY CLASSIFICATIONS

GROUP 1: Flagperson, gateperson

GROUP 2: General laborers, chuck tender, handling and
distributing drinking water, distributing all tools and supplies
of laborers, nipper, powder carrier, magazine tender, warehouse

0 laborers, concrete man, vibrator man, mason tender, mortar man,
1 spraying, brushing and covering of concrete for curing and
2 preservative purposes, traffic striper, scaffold builder,
3 concrete crub and sidewalk from setter; permanent traffic
4 striping and reflective devices, placing and maintenance of all
5 flares, cones, lights, signs, barricades, traffic patterns, and
6 all temporary reflective type materials for traffic control,
7 custodial work, traffic directors, temporary heat or light
8 tenders, tool room, dewatering pump men, pitman, dumpmen, snow
9 removal and firewatch, asphalt man, joint setter, signal person,
0 pipelayer, pipelining and relining, wellpoints, conduit and duct
1 layer, wire puller rip rap and dry stone layer, steel rod
2 carrier, core drill, rock splitter, Hilti gun air or electric,
3 jackhammer, bush hammer, pavement breaker, chipping hammer, wagon
4 drill, air track, jib rig, joy drill, gunite and sand blasting,
5 coal passer and other machine operators, power tool operator,
6 sprayer and nozzle man on mulching and seeding machine, all guard
7 rail and fence, all seeding and sod laying, all landscape work,
8 grade checker, all bridge work, walk behind self-propelled power
9 saw, grinder, groover or similar type machine, walk behind tamper
0 and roller of all types, salvage, stripping, wrecking and
1 dismantling laborer (including barman, cutting torch and burner
2 man), sheeting and shoring coming under laborers
3 jurisdicition, bit grinder, operator of form pin puller and
4 drivers, sandblasting, joint and jet sealer, filling and wiring
5 baskets for gabion walls, permanent sign man, median barrier,
6 sta-wall or similar type product, chain saw operator, railroad
7 track laborer, waterproofer, pre-stressed and pre-cast concrete
8 brick, block and stone pavers, power tools used to perform work
9 usually done by laborers, power buggy and pumpcrete operator,
0 fireproof, plaster and acoustic pump, asbestos, toxic, bio-
1 remediation, phyto-remediation, lead or hazardous materials
2 abatement when protective clothing and equipment is not required,
3 power brush cutter, retention liners, artificial turf, retaining
4 walls, walk behind surface planer, welding related to laborers
5 work, remote controlled equipment normally operated by laborers,
6 all technician work including but not limited to stitching,
7 seaming, heat welding, fireproof sprayer, mortar mixer, concrete
8 finisher, form setter for concrete curbs and flatwork. Gunite
9 nozzle man, stone cutters, granite stone layer, manhole, catch
0 basin or inlet installing, lase men. Ground man on milling
1 machine.
2
3 GROUP 3: Ingersoll Rand eavy duty crawler master type HCMZ any
4 drill using 4" or larger bit, asbestos, toxic, bio-remediation,
5 phyto-remediation, lead or hazardous material abatement when
6 protective clothing and equipment is required, all working
7 foremen including grade, pipe, concrete, clearing, blacktop,
8 drill, paving and blaster etc., Hydraulic drill or similar,
9 forklift for masonry only, Blaster and asphalt screedman.
0
1 GROUP 4: Asbestos, toxic, lead or hazardous material abatement
2 foreman.

DUTCHESS COUNTY (Asbestos, Lead, toxic and hazardous waste
abatement and any other environmental related
work)

HEAVY & HIGHWAY CONSTRUCTION

GROUP 1:	25.60	11.50
GROUP 2:	30.20	11.50

HEAVY & HIGHWAY CLASSIFICATIONS

GROUP 1: Asbestos, toxic, bio-remediation, phyto-remediation, lead or hazardous material abatement; when protective equipment and clothing are not required.

GROUP 2: Asbestos toxic, bio-remediation, phyto-remediation, lead or hazardous materail abatement when protective clothing and equipment is required.

TUNNEL, SHAFT & CASSION WORK

GROUP 1	26.90	11.50+a
GROUP 2	31.25	11.50+a

FOOTNOTE:

PAID HOLIDAYS: New Years Day, Presidents's Day, Memorial Day, Independence Day, Labor Day, Election Day, Veterans Day, Thanksgiving Day, Christmas Day

TUNNEL, SHAFT & CASSION CLASSIFICATIONS

GROUP 1: Laborer, Pit and Dumpman, Chuck Tender, Brakeman and Powder

GROUP 2: Miner and all mavhine men, Safety Miner, all shaft work, casson work, drilling, blow pipe, all air tools, tugger scaling, nipper gunniting srom pot to nozzle, bit grinder, singal man (top and bottom), shift steward, concrete man, shield driven tunnel, mixed face and soft ground liner plate tunnel in free air.

LABO1000A 06/01/2002

	Rates	Fringes
DUTCHESS COUNTY		
LABORERS (BUILDING CONSTRUCTION):		
GROUP 1	22.20	12.50
GROUP 2	22.70	12.50
GROUP 3	24.55	12.50

LABORERS CLASSIFICATIONS (BUILDING)

GROUP 1: Mason tenders, carpenter tenders, laborer stripping and cleaning forms, laborer grading and digging ditches, sweepers, cleaners.

GROUP 2: Hod carriers, plasterers' tenders, scaffold builders (padlock and self-supporting scaffold 14 ft. or under all runways, mortar mixers) machine and hand, concrete mixers by machine under 21e, vibrators, form setters, asphalt rakers, handling reinforcement rods, drillers, jackhammer, operator, signalman, gunniting, motorbugs, water pump 2" or under barco machine, wreckers, paving breakers, power saw operators, other machine operators.

GROUP 3: Blasters, Laser beam operator.

LABO1000D 05/01/2002

	Rates	Fringes
DUTCHESS COUNTY		
LABORERS (HEAVY & HIGHWAY):		
GROUP 1	18.80	12.00+a
GROUP 2	22.56	12.00+a
GROUP 3	22.56	12.00+a
GROUP 4	23.56	12.00+a

LABORERS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Flagperson, placing and maintenance of all flares, cones, light, signs, barricades, traffic control, custodial work, traffic directors, temporary heat or light tenders, tool rooms.

GROUP 2: General Laborers, Dumpman, Pitman.

GROUP 3: Concrete Man, Signal Man, Pipelayer, Rip Rap, Dry Stone Layer, Jackhammer, Powderman, Highscalers, Power Buggy Operator, Steel Rod Carrier, Vibratory Operator, Other Machine Operator, Wrecking, Vibrator Operator-Compactor, Gunite and Sand Blasting, Water Pump 2" or under, Nipper, Chucker, Asphalt Workers.

GROUP 4: Asphalt Raker, Asphlat Screeman, Drillers (all), Laser Beam Operator, Form Setter/Aligners, Blasters.

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, Lincoln's Birthday, Good Friday, Washington's Birthday, November Election Day, Memorial Day, Independence Day, Labor Day, Columbus day, Thanksgiving Day and Christmas Day and Veteran's Day.

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9 PAIN0009F 05/01/2002
0 Rates Fringes
1 DUTCHESS, ORANGE, SULLIVAN and
2 ULSTER COUNTIES
3
4 GLAZIERS 32.20 20.17
5 ----------
6
7 PAIN0009T 06/01/2002
8 Rates Fringes
9 DUTCHESS COUNTY, SULLIVAN AND ULSTER COUNTIES
0
1 PAINTERS
2 Painter/Paperhanger 19.99 11.21
3 Drywall Finishers 19.99 11.21
4 Spray Rate 20.99 11.21
5 Structural Steel 36.49 11.21
6 Bridges, Swing Stage, Boatswain
7 Chair, Pick & Cables over 20 ft. 36.49 11.21
8 Lead Abatement Work 19.49 11.21
9
0 ORANGE COUNTY
1
2 PAINTERS
3 Painter/Paperhanger 20.99 11.21
4 Drywall Finishers 20.99 11.21
5 Spray Rate 21.99 11.21
6 Structural Steel 36.49 11.21
7 Bridges, Swing Stage, Boatswain,
8 Chair, Pick & Cables over 20 ft. 36.49 11.21
9 Leadabatement Work 20.99 11.21
0 ----------
1
2 PLUM0201B 04/01/2002
3 Rates Fringes
4 DUTCHESS COUNTY AND THE REMAINDER
5 OF ULSTER COUNTY
6
7 PLUMBERS AND STEAMFITTERS 26.00 17.33
8 ----------
9
0 PLUM0373B 05/01/2002
1 Rates Fringes
2 ZONE 1
3
4 ORANGE COUNTY
5 Towns of Lakeville, Four Corners, Sterling Forest, Tuxedo
6 Park, Southfields, Arden, Newburgh Junction, Greenwood Lake,
7 Monroe, Harriman, Woodbury Falls, Woodbury, Woodbury Station,
8 Central Valley, and the Palisades Interstate Park and Bear
9 Mountain Park
0
1 PLUMBERS & STEAMFITTERS 31.72 16.40

2 REFRIGERATION 23.04 11.88
3 ----------
4
5 PLUM0373C 05/01/2002
6 Rates Fringes
7 ZONE 2
8
9 SULLIVAN COUNTY (Townships of Lumberland, Forestburgh, Highland,
0
1 Tusten, Mamakating, Fallsburgh, Thompson, Bethel, Cochecton,
2 Delaware, Freemont, Callicoon, Liberty, Monticello, Neversink and
3 Rockland); ORANGE COUNTY (Remaining Townships) and ULSTER COUNTY
4 (Towns of Shawangurk, Wawarsing, Plattekill, Marlboro and
5 Ellenville up to Napanoch Prison)
6
7 PLUMBERS AND STEAMFITTERS 28.55 14.55
8 ----------
9
0 ROOF0008B 07/01/2002
1 Rates Fringes
2 ROOFER 30.08 18.78
3 ----------
4
5 SFNY0669B 04/01/2003
6 Rates Fringes
7 SPRINKLER FITTERS 34.80 6.10
8 ----------
9
0 SHEE0038A 07/01/2001
1 Rates Fringes
2 SHEET METAL WORKERS 31.30 15.69
3 ----------
4
5 TEAM0445A 05/01/2002
6 Rates Fringes
7 TRUCK DRIVERS:
8 GROUP 1 23.75 15.55+a
9 GROUP 2 23.65 15.55+a
0 GROUP 3 23.45 15.55+a
1 GROUP 4 23.35 15.55+a
2 GROUP 5 23.25 15.55+a
3
4 FOOTNOTE:
5 a. PAID HOLIDAYS: New Year's Day, Labor Day, President's Day,
6 Presidential Election Day, Veterans Day, Decoration Day,
7 Independence Day, Thanksgiving Day and Christmas Day provided
8 the employee works two days in any calendar week during
9 which the holidays occurs.
0
1 TRUCK DRIVER CLASSIFICATIONS
2
3 GROUP 1: Drivers on Letourneau tractors, double barrel euclids,
4 Athey wagons and similar equipment (except when hooked to

5 scrapers), drivers on low beds, I-beam and pole trailers, drivers
6 of road oil distributors, tire trucks and tractors and trailers
7 with 5 axles and over.
8
9 GROUP 2: Drivers on all equipment 25 yards and over, up to and
0 including 30 yard bodies and cable dump trailers and powder and
1 dynamite truucks.
2
3 GROUP 3: Drivers on all equipment up to and including 24 yard
4 bodies, mixer trucks, dump crete trucks and similar types of
5
6 equipment, fuel trucks and all other tractor trailers.
7
8 GROUP 4: Drivers on ten-wheelers, grease trucks and tillermen.
9
0 GROUP 5: Drivers on pick-up trucks used for materials & parts,
1 drivers on escort man over-the-road and drivers on straight
2 trucks.
3 ----------
4
5 WELDERS - Receive rate prescribed for craft performing operation
6 to which welding is incidental.
7 ==========
8
9 Unlisted classifications needed for work not included within
0 the scope of the classifications listed may be added after
1 award only as provided in the labor standards contract clauses
2 (29 CFR 5.5(a)(1)(ii)).
3 ----------
4 In the listing above, the "SU" designation means that rates
5 listed under that identifier do not reflect collectively
6 bargained wage and fringe benefit rates. Other designations
7 indicate unions whose rates have been determined to be
8 prevailing.
9
0 WAGE DETERMINATION APPEALS PROCESS
1
2 1.) Has there been an initial decision in the matter? This can
3 be:
4
5 * an existing published wage determination
6 * a survey underlying a wage determination
7 * a Wage and Hour Division letter setting forth a
8 position on a wage determination matter
9 * a conformance (additional classification and rate)
0 ruling
1
2 On survey related matters, initial contact, including requests
3 for summaries of surveys, should be with the Wage and Hour
4 Regional Office for the area in which the survey was conducted
5 because those Regional Offices have responsibility for the
6 Davis-Bacon survey program. If the response from this initial
7 contact is not satisfactory, then the process described in 2.)

8 and 3.) should be followed.
9
0 With regard to any other matter not yet ripe for the formal
1 process described here, initial contact should be with the Branch
2 of Construction Wage Determinations. Write to:
3
4 Branch of Construction Wage Determinations
5 Wage and Hour Division
6 U. S. Department of Labor
7
8 200 Constitution Avenue, N. W.
9 Washington, D. C. 20210
0
1 2.) If the answer to the question in 1.) is yes, then an
2 interested party (those affected by the action) can request
3 review and reconsideration from the Wage and Hour Administrator
4 (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:
5
6 Wage and Hour Administrator
7 U.S. Department of Labor
8 200 Constitution Avenue, N. W.
9 Washington, D. C. 20210
0
1 The request should be accompanied by a full statement of the
2 interested party's position and by any information (wage payment
3 data, project description, area practice material, etc.) that the
4 requestor considers relevant to the issue.
5
6 3.) If the decision of the Administrator is not favorable, an
7 interested party may appeal directly to the Administrative Review
8 Board (formerly the Wage Appeals Board). Write to:
9
0 Administrative Review Board
1 U. S. Department of Labor
2 200 Constitution Avenue, N. W.
3 Washington, D. C. 20210
4
5 4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

SECTION 00901

PERMITS

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz , New York 12561-1696
Phone: (845) 256-3054• **FAX:** (845) 255-3042
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

December 31, 2002

ATTN: LEONARD HOUSTON
U.S. DEPARTMENT OF THE ARMY
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NEW YORK 10278-0090

RE: **Permit No.: 3-1346-00043/3**
Town of: Poughkeepsie, Dutchess County
Facility Name: Marist College Longview Park
Resource: Hudson River

PERMIT MODIFICATION

Dear Mr. Houston:

In accordance with your written request of November 27, 2002, the expiration date of the above permit is hereby extended to December 31, 2003, to rehabilitate 1150 feet of shoreline with a combination of sheet piling and rip-rap.

All other terms and conditions remain as written in the original permit and as modified on May 10, 2002. Please attach this modification to the front of your permit.

If there are any questions, please contact Lawrence G. Biegel of my staff at (845) 256-3041.

Sincerely,

Michael D. Merriman
Deputy Regional Permit Administrator
Region 3

MDM/LGB/jjc

cc: J. Isaacs

C:\My Files\Jennifer\Merriman letter to Houston

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, New York 12561-1696
Phone: (845) 256-3000 FAX: (845) 255-3042
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

May 10, 2002

FRANK SANTOMAURO
CHIEF PLANNING DIVISION
US ARMY CORPS OF ENGINEERS
JACOB K JAVITS FEDERAL BUILDING
NEW YORK NY 10278-0090

RE: Permit No.: 3-1346-00043/00003
Town of: Poughkeepsie, Dutchess County
Facility Name: Marist College Longview Park
Resource.: Hudson River

PERMIT MODIFICATION

In accordance with your written request of October 12, 2001, the above permit is hereby modified as follows:

- to change "Item A" on page two to read as follows:

Item A: Permittee Accepts Legal Responsibility and Agrees to Idemnification is included by the State of New York as the permit issuing authority under the Clean Water Act. This item does not, nor does it intend to apply to ,abrogate, or annul any obligation, responsibility or liability of the part of Dutchess County, including indemnification by the County under the Project Cooperation Agreement (PCA) for the Emergency Streambank Restoration (Section 14) Hudson River, Town of Poughkeepsie project. No provision of this permit shall be deemed to supersede applicable federal law with regard to appropriation of funds or liability for damages caused by the Army Corps of Engineers or its agents or other representatives. Pursuant to the PCA, Dutchess County remains legally responsible to hold and save the Federal Government free from all damages arising from the construction, operation, maintenance, repair replacement, and rehabilitation of the Project and any Project-related betterments, including liabilities arising from Item A, except for damages due to the fault or negligence of the Federal Government or its contractors.

All other terms and conditions remain as written in the original permit. Please attach this modification to the front of your permit.

If there are any questions, please contact Lawrence G. Biegel of my staff at (845) 256-3041.

Sincerely,

Michael D. Merriman
Deputy Regional Permit Administrator
Region 3

MDM/LGB/dv
cc: W. Adriance

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, New York 12561-1696
Phone: (845) 256-3000 • FAX: (845) 255-3042
Website: www.dec.state.ny.us

John P. Cahill
Commissioner

October 17, 2000

IMPORTANT NOTICE TO ALL PERMITTEES

Mr. Frank Santamauro, P.E.
US ACE, Planning Division
Jacob Javits Ctr.
26 Federal Plaza
New York, NY

Dear Mr. Santamauro:

The Water Quality Certification you requested is enclosed. Please read it carefully and note the special conditions that are included in it. The permit is valid for only that activity expressly authorized therein; work beyond the scope of the permit may be considered a violation of law and be subject to appropriate enforcement action.

Please note the expiration date of the permit. Applications for permit renewal should be made well in advance of the expiration date. For specific instructions contact the above office.

NOTE:

The DEC permit number & program ID number noted on the top of page 1 of the permit are important and should be retained for your records. These numbers should be referenced on all correspondence related to this permit, and on any future applications for permits associated with this facility/project area.

If you have any questions on the extent of work authorized or your obligations under the permit, please contact me at the (845)256-3162.

Sincerely,

Larry Wilson

Larry Wilson
Environmental Analyst

Enc.: Permit

95-20-6(10/90)-25c R3

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC PERMIT NUMBER
3-1346-00043/00003

FACILITY/PROGRAM NUMBER(s)

PERMIT
Under the Environmental Conservation Law (ECL)

EFFECTIVE DATE
October 18, 2000

EXPIRATION DATE
December 31, 2002

TYPE OF PERMIT (Check All Applicable Boxes)
☒ New ☐ Renewal ☐ Modification ☐ Permit to Construct ☐ Permit to Operate

☐ Article 15, Title 5: Protection of Waters	☐ Article 17, Titles 7, 8: SPDES	☐ Article 27, Title 9; 6NYCRR 373: Hazardous Waste Management
☐ Article 15, Title 15: Water Supply	☐ Article 19: Air Pollution Control	☐ Article 34: Coastal Erosion Management
☐ Article 15, Title 15: Water Transport	☐ Article 23, Title 27: Mined Land Reclamation	☐ Article 36: Floodplain Management
☐ Article 15, Title 15: Long Island Wells	☐ Article 24: Freshwater Wetlands	☐ Articles 1, 3, 17, 19, 27, 37; 6NYCRR 380: Radiation Control
☐ Article 15, Title 27: Wild, Scenic & Recreational Rivers	☐ Article 25: Tidal Wetlands	☐ Other _____
☒ 6NYCRR 608: Water Quality Certification	☐ Article 27, Title 7; 6NYCRR 360: Solid Waste Management	

PERMIT ISSUED TO
US Army Corps of Engineers, New York District

TELEPHONE NUMBER

ADDRESS OF PERMITTEE
Jacob K. Javits Federal Bldg., 26 Federal Plaza, New York NY 10278-0090

CONTACT PERSON FOR PERMITTED WORK
Frank Santamauro, P.E.

TELEPHONE NUMBER
(212) 264-9846

NAME AND ADDRESS OF PROJECT/FACILITY
Town of Poughkeepsie Shoreline (Marist College Longview Park), 290 North Road

LOCATION OF PROJECT/FACILITY
East shore of Hudson River, Rivermile 76

COUNTY	TOWN	WATERCOURSE/WETLAND NO.	NYTM COORDINATES
Dutchess	Poughkeepsie	Hudson River	E: 588.4 N: 4619.8

DESCRIPTION OF AUTHORIZED ACTIVITY
Rehabilitate approximately 1150 linear feet of shoreline using a combination of steel sheet piling, gabions and rip rap in accordance with the conditions of this permit.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

DEPUTY PERMIT ADMINISTRATOR	ADDRESS	
Michael D. Merriman	21 South Putt Corners Rd., New Paltz NY 12561	☞ lrw

AUTHORIZED SIGNATURE	Date	
Michael D. Merriman	October 18, 2000	Page 1 of 4

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, agents, and assigns for all claims, suits, actions, damages, and costs of every name and description, arising out of or resulting from the permittee's undertaking of activities or operation and maintenance of the facility or facilities authorized by the permit in compliance or non-compliance with the terms and conditions of the permit.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

GENERAL CONDITIONS

General Condition 1: Facility Inspection by the Department
The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

General Condition 2: Relationship of this Permit to Other Department Orders and Determinations
Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

General Condition 3: Applications for Permit Renewals or Modifications
The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

The permittee must submit a renewal application at least:

a) 180 days before expiration of permits for State Pollutant Discharge Elimination System (SPDES), Hazardous Waste Management Facilities (HWMF), major Air Pollution Control (APC) and Solid Waste Management Facilities (SWMF); and
b) 30 days before expiration of all other permit types.

Submission of applications for permit renewal or modification are to be submitted to:

NYSDEC Regional Permit Administrator, Region 3
21 South Putt Corners Rd., New Paltz, NY 12561, telephone: (845) 256-3054

General Condition 4: Permit Modifications, Suspensions and Revocations by the Department
The Department reserves the right to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a) the scope of the permitted activity is exceeded or a violation of any condition of the permit or provisions of the ECL and pertinent regulations is found;
b) the permit was obtained by misrepresentation or failure to disclose relevant facts;
c) new material information is discovered; or
d) environmental conditions, relevant technology, or applicable law or regulation have materially changed since the permit was issued.

ADDITIONAL GENERAL CONDITIONS FOR ARTICLES 15 (TITLE 5), 24,25,34,36 AND 6NYCRR PART 608 Water Quality Certification

1. If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

2. The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

3. Granting of this permit does not relieve the applicant of the responsibility of obtaining any other permission, consent or approval from the U.S. Army Corps of Engineers, U.S. Coast Guard, New York State Office of General Services or local government which may be required.

4. All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

5. Any material dredged in the conduct of the work herein permitted shall be removed evenly, without leaving large refuse piles, ridges across the bed of a waterway or floodplain or deep holes that may have a tendency to cause damage to navigable channels or to the banks of a waterway.

6. There shall be no unreasonable interference with navigation by the work herein authorized.

7. If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

8. If granted under 6NYCRR Part 608, the NYS Department of Environmental Conservation hereby certifies that the subject project will not contravene effluent limitations or other limitations or standards under Sections 301, 302, 303, 306 and 307 of the Clean Water Act of 1977 (PL 95-217) provided that all of the conditions listed herein are met.

9. All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or his agent as part of the permit application.
Such approved plans were prepared by _____
_____ on _____.

SPECIAL CONDITIONS

- The permittee or a representative shall contact by telephone, the Division of Law Enforcement in New Paltz **(845) 256-3013**, 48 hours prior to the commencement of any portion of the project authorized herein.
- The permittee shall require that any contractor, project engineer, or other person responsible for the overall supervision of this project reads, understands and complies with this permit, including all special conditions to prevent environmental degradation.
- For Article 15, Protection of Waters permits, the permittee or an authorized representative shall notify the Department by mailing the attached form at least 48 hours prior to the commencement of any portion of the project authorized herein.

Continued on next page...

SPECIAL CONDITIONS

For Article 6NYCRR 608, Water Quality Certification)

1. Rehabilitate approximately 1150 linear feet of shoreline using a combination of steel sheet piling, gabions and rip rap in accordance with the plans titled, "Hudson River Section 14 Emergency Riverbank Restoration Project," (sheets 1 and 2) prepared by Dubois and King, Inc., dated June 2000.

2. The permittee shall employ measures sufficient to prevent contamination of the waters of Hudson River by silt, sediment, fuels, concrete leachate or any other pollutant associated with construction or construction procedures.

3. Bales of hay or other effective means to control erosion are to be used on the downslope edge of any disturbed areas. This barrier to sediments is to be put in place before any disturbance of the ground occurs and is to be maintained in good condition until all disturbed land is heavily vegetated.

4. Any debris or excess materials from construction of this project shall be immediately and completely removed from the bed and banks of all water areas to an appropriate upland area for disposal.

5. All areas of soil disturbance resulting from this project (above the mean high water line) shall be seeded with an appropriate perennial grass seed and mulched with hay or straw within one week of final grading. Mulch shall be maintained until a suitable vegetative cover is established.

STATE ENVIRONMENTAL QUALITY REVIEW

Under the State Environmental Quality Review Act (SEQR) this project has been determined to be a "replacement, in kind," and is therefore, a Type II Action and not subject to further procedures under this law.

Distribution:
J. Isaacs
B. Orzel, ACOE NY District
T. Daly, Marist College
Supervisor, Town of Poughkeepsie
F. Dunwell

DEC PERMIT NUMBER		
3-1346-00043/00003		
FACILITY ID NUMBER	PROGRAM NUMBER	Page 4 of 4

SECTION 00902

INSURANCE

SECTION 00902
Insurance Clause

INSURANCE PROCURED BY CONTRACTOR – This Section replaces Paragraph 4, Section 00800

1. The Contractor shall procure and maintain during the entire period of its performance under this contract the following insurance policies:

(a) *Commercial General Liability Insurance* in limits of not less than One Million Dollars ($1,000,000) per occurrence and not less than Three Million Dollars ($3,000,000) per aggregate for bodily injury, death, personal injury and property damage, including but not limited to coverage for premises-operations, products and completed operations, independent contractors and subcontractors, broad form property damage, property damage arising out of explosion, collapse or underground property damage hazards with a contractual liability endorsement covering the risks assumed and indemnification given by the Dutchess County under the Project Cooperation Agreement for the Section 14 Emergency Stream Bank Erosion Project at Marist College. A copy of such Agreement shall be furnished to the insurance underwriter.

(b) *Automobile Liability Insurance* covering owned, non-owned, and hired automobiles with a combined single limit of liability per occurrence of not less than $1,000,000 for bodily injury and property damage.

(c) *Owner's and Contractor's Protective Liability Insurance* with a limit of $4,000,000 shall be provided by the Contractor for General Work for the sole protection of Dutchess County.

(d) *Excess Liability Insurance* with limit of liability of not less than $10,000,000 with drop-down provision included. This must be excess of all primary liability contacts. When the required underlying limits of the excess carrier are less than those required by these specifications, the lower underlying limits will be acceptable.

(e) *Builders Risk Insurance* for coverage which shall be written for 100% of the completed value of this project subject to a deductible of not more than $1,000. The form of coverage shall be Builders Risk Completed Value, All-Risk Form with an extension of building coverage to include personal property of others in the care,

custody and control of the insured. All property losses shall be made payable to and adjusted with Dutchess County.

2. The policies described in (a), (b), (c), (d) and (e) above shall be endorsed to include Dutchess County, Marist College, the Town of Poughkeepsie and City of Poughkeepsie each as an additional insured, with the policies described in (a), (b), (c), (d) and (e) above to contain a provision that the policies may not be cancelled, terminated or modified without thirty days written notice to the Contracting Officer, US Army Corps of Engineers, 26 Federal Plaza, New York, New York 10278-0090 and the Office of Risk Management, Dutchess County Office Building, 22 Market Street, Poughkeepsie, NY 12601, Att: Linda S. Way-Hartmann. Moreover, the Commercial General Liability policy shall not contain any provisions for exclusions from liability other than provisions for exclusions from liability forming part of the standard, basic un-amended and unendorsed commercial general liability policy. The policies described in (a), (b), (c) and (d) above shall include cross-liability coverage.

3. Further, the liability policies shall be specifically endorsed to prohibit the insurance carrier from raising any defense involving in any way jurisdiction of the Tribunal, immunity of Dutchess County, governmental nature of Dutchess County or the provisions of any statutes respecting suits against Dutchess County without obtaining written expressed advance permission from the Counsel for Dutchess County.

4. The Contractor shall take out and maintain Workers Compensation and Employers Liability Insurance in compliance with the Compensation Law of the State of New York for which the contractor (and or subcontractors) shall provide proof of said insurance.

5. The contractor/vendor shall indemnify and hold harmless Dutchess County, it's Elected Officials, Legislature, Officers, Employees, Agents and Servants from and against any and all losses, penalties, damages, settlements, costs, charges, professional fees (including attorneys' fees) or other expenses or liabilities including the investigation and defense of any claims, arising out of or resulting from the performance of the contractor/vendor's work or the completed operations provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of the use resulting therefrom, and (b) is caused in whole or in part by any negligent act or omission of the contractor/vendor, or anyone directly or indirectly employed by them or anyone for whose acts they may be liable (including a claim by an employee of the contractor/vendor) regardless of whether it is caused in part by a party indemnified hereunder.

In any and all claims against Dutchess County, it's Elected Officials, Legislature, Officers, Employees, Agents and Servants by any employees of the contractor/vendor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Agreement shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the contractor/vendor under worker's compensations acts, disability benefits acts or other employee benefit acts.

6. The Contractor shall furnish to the Contracting Officer a certificate or statement of the above required insurance prior to the commencement of work under this contract. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of Dutchess County, Marist College, the Town of Poughkeepsie and City of Poughkeepsie in such insurance shall not be effective for such a period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than thirty (30) days after written notice thereof to the Contracting Officer and Dutchess County. The Contracting Officer shall have the right, upon written notice, to receive certified copies of the policies required hereunder.

7. Prior to the commencement of work hereunder, the Contractor shall furnish to the Contracting Officer a certificate or statement of the above required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of the Government in such insurance shall not be effective for such a period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than thirty (30) days after written notice thereof to the Contracting Officer.

8. The Contractor agrees to insert the substances of this clause, including this paragraph 8., in all subcontracts hereunder.

MAIN TABLE OF CONTENTS

Marist College Hudson River Waterfront Bulkhead Project,

Poughkeepsie, Duchess County, New York

SECTION	TITLE	NO. OF PAGES
CONTRACT REQUIREMENTS		
00010	SF 1442 AND BIDDING SCHEDULE	
00100	INSTRUCTIONS, CONDITIONS, AND NOTICE TO BIDDERS	
00600	REPRESENTATIONS AND CERTIFICATIONS	
00700	CONTRACT CLAUSES	
00800	SPECIAL CONTRACT CLAUSES	11
00900	WAGE RATES	25
00901	PERMITS	4
00902	INSURANCE CLAUSE	3
TECHNICAL PROVISIONS		
01110N	SUMMARY OF WORK	
01311	PROJECT SCHEDULE: BAR CHART	2
01312	RESIDENT MANAGAMENT SYSTEM	4
01330	SUBMITTAL PROCEDURES	22
01335A	ENVIRONMENTAL PROTECTION	6
01420	SAFETY	4
01451A	CONTRACTOR QUALITY CONTROL	6
01453	CONTRACTOR WARRANTY MANAGEMENT	2
02210A	SUBSURFACE DRILLING, SAMPLING, AND TESTING	6
02230	CLEARING AND GRUBBING, DEMOLITION AND OFF SITE DISPOSAL	2
02300A	EARTHWORK	4
02371A	WIRE MESH GABIONS	6

02378A	GEOTEXTILES USED AS FILTERS	3
02381	RIPRAP	4
02455A	DRILLED FOUNDATION CAISSONS (PIERS), AND CAST-IN-PLACE CONCRETE FILLED PILES, STEEL CASINGS	6
02464A	METAL SHEET PILING	4
03307A	CONCRETE FOR MINOR STRUCTURES	6
05055A	MISCELLANEOUS STEEL	7
06100A	ROUGH CARPENTRY	3
09805	SHEET PILE AND CAISSON COATING	2
13110A	CATHODIC PROTECTION BY GALVANIC ANODES	2

SECTION 01110N

SUMMARY OF WORK
09/01

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-I-16165	(Rev. E) Shielding Harness, Shielding Items and Shielding Enclosures for use in Reduction of Interference from Engine Electrical Systems
MIL-STD-461	(Rev. D) Control of Electromagnetic Interference Emissions and Susceptibility
MIL-STD-462	(Rev. D) Electromagnetic Interference Characteristics

1.2 WORK COVERED BY CONTRACT DOCUMENTS

1.2.1 Project Description

The work includes bulkhead improvements along 1,100± feet of the Hudson River Shoreline. The work is subject to the condition of permits issued by the U.S. Army Corps of Engineers (ACOE), the New York State Department of Environmental Conservation (NYSDEC) and the New York Statement Department of State ((NYSDOS). The bulkhead improvements along 1,100± feet of the Hudson River shoreline including, but not limited to, clearing and grubbing, the demolition and disposal of existing timber piling, debris and rubbish disposal, caissons and steel sheeting cantilivered bulkhead with concrete encasement and timber curbing, gabions and the placement of new and repositioned riprap along with bedding stone and geotextile placement. The work also includes the provision of adequate equipment and methods to protect the air, river water and land, in and around the project area from contamination and other harmful effects through the contract period, including demolition, removal and reconstruction and all other incidental related work.

1.2.2 Location

The work shall be located at Marist College, Poughkeepsie, New York, approximately as indicated. The exact location will be shown by the Contracting Officer.

1.3 EXISTING WORK

In addition to "FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements":

a. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.

b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Contracting Officer. At the completion of operations, existing work shall be in a condition equal to or better than that which existed before new work started.

1.4 LOCATION OF UNDERGROUND FACILITIES

1.4.1 Notification Prior to Excavation

Notify the Contracting Officer at least 15 days prior to starting excavation work. The work to be performed under this contract is subject to Rule 52 of the New York Underground Facilities Code. The Contractor is required by law to notify the Underground Protective Organization at 1-800-962-7962 at least two (2) work days prior to the commencement of any excavation. The Contractor is responsible for marking all utilities not marked by the Underground Protective Organization.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01311

PROJECT SCHEDULE: BAR CHART
NYD EDITION 8/97

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300 SUBMITTAL PROCEDURES:

SD-07 Schedules

Initial Project Schedule; GA. Revised Project Schedule; GA. Periodic Schedule Updates; GA.

SD-08 Progress Curve

SD-09 Narrative Reports with schedule updates.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

Pursuant to the Contract Clause, SCHEDULES FOR CONSTRUCTION CONTRACTS, and the Special Contract Requirement SCHEDULING AND DETERMINATION OF PROGRESS the contractor shall prepare and submit for approval a practicable project schedule. The schedule will be submitted within five (5) days after receipt of Notice to Proceed or as otherwise determined by the Contracting Officer.

3.2 BASIS FOR PAYMENT

The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.3 PROJECT SCHEDULE

The Project Schedule shall be in the form of chart consisting of a series of bars graphically indicating the sequence proposed to accomplish each work feature or operation. Each bar will represent a work feature, system or series of activities within the construction project. The chart shall be prepared to show the starting and completion dates of all work features on a linear horizontal time scale beginning with date of Notice to Proceed and indicating calendar days to completion. Interdependence of status of

activities shall be shown. Horizontal time scale shall allow identification of the first work day of each week, which shall be identified. Space between bars shall be allowed for future revisions and notations.

3.4 PROGRESS CURVE

With the Project Schedule the contractor shall also submit for approval a progress curve which reflects the intended schedule for completing the work. The progress curve (S?Curve) will be plotted to reflect Cumulative Progress (Percent) based on placement along the y?axis and Time along the x?axis.

3.5 SCHEDULE and PROGRESS CURVE UPDATES

Approved Schedule and Progress Curve will be updated monthly during the entire duration of construction. Not later than four days after the Monthly Progress Meeting the contractor shall submit updated Project Schedule and Progress Curve. The updated versions shall include all approved contract revisions, progress of each activity to date of submission, and adjustments. Contractor shall also provide a very brief narrative report as required to indicate any problem areas, anticipated delays, impact on schedule, and corrective action.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly on? site meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor will describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

- End of Section -

SECTION 01312

RESIDENT MANAGEMENT SYSTEM (RMS)
(NYD Version 09/00)

1.1 GENERAL

The Government will use the Resident Management System for Windows (RMS-W) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS-Windows, referred to as RMS-QC (QC for Quality Control), to record, maintain, and submit various information throughout the contract period. This joint Government-Contractor use of RMS-W and RMS-QC will facilitate electronic exchange of information and overall management of the contract. RMS-QC provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

Administration
Finances
Quality Control
Submittal Monitoring
Scheduling
Import/Export of Data

1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01320, "Project Schedule", Section 01330, SUBMITTAL PROCEDURES, and Section 01451, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through RMS-QC. Also, there is no separate payment for establishing and maintaining the RMS-QC database; all costs associated therewith shall be included in the contract pricing for the work.

1.2 RMS-QC SOFTWARE

RMS-QC is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the RMS-QC software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the RMS-QC software from

the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide RMS-QC on 3-1/2" high-density diskettes or CD-ROM. Any program updates of RMS-QC will be made available to the Contractor via the Government RMS Website as they become available.

1.3 SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run RMS-QC:

Hardware

IBM-compatible PC with 200 MHz Pentium or higher processor

64+ MB RAM

4 GB hard drive disk space for sole use by the RMS-QC system

3 1/2 inch high-density floppy drive

Compact disk (CD) Reader

Color monitor

Laser printer compatible with HP LaserJet III or better, with minimum 4 MB installed memory.

Connection to the Internet, minimum 28 BPS

Software

Microsoft (MS) Access 97 or newer version database software

MS Windows 95 or newer version operating system (MS Windows NT 4.0 or newer is recommended)

Word Processing software- MS Word 97 or newer

Internet browser

The Contractor's computer system shall be protected by virus protection software that is regularly upgraded with all issued manufacturer's updates throughout the life of the contract.

Electronic mail (E-mail) compatible with MS Outlook

1.4 RELATED INFORMATION

1.4.1 RMS-QC User Guide

After contract award, the Contractor shall download instructions for the installation and use of RMS-QC from the Government RMS Internet Website ('http://winrms.usace.army.mil');

1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for RMS-QC. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.6 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the RMS-QC database throughout the duration of the contract. The Contractor shall establish and maintain the RMS-QC database at the Contractor's site office. Data updates to the Government shall be submitted by E-mail with file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer, a data diskette or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM). The RMS-QC database typically shall include current data on the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of RMS-QC software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

1.6.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in RMS-QC. Within 14 calendar days of receipt of RMS-QC software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

1.6.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

1.6.1.4 Equipment

The Contractor's RMS-QC database shall contain a current list of equipment

planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.5 Management Reporting

RMS-QC includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of RMS-QC. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.6.2 Finances

1.6.2.1 Pay Activity Data

The RMS-QC database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. CLINs may include multiple activities, but activities may be assigned to only one such CLIN Item. The total of all CLINs equals the Contract Amount.

1.6.2.2 Payment Requests

All progress payment requests shall be prepared using RMS-QC. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using RMS-QC. The Contractor shall submit the payment requests with supporting data by E-mail with file attachment(s). If permitted by the Contracting Officer, a data diskette may be used instead of E-mail. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.6.3 Quality Control (QC)

RMS-QC provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the RMS-QC generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01451, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a data diskette or CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.6.3.1 Daily Contractor Quality Control (CQC) Reports.

RMS-QC includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by RMS-QC shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the RMS-QC-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01451, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government using E-mail or diskette within 24 hours after the date covered by the report. Use of either mode of submittal shall be coordinated with the government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

1.6.3.2 Deficiency Tracking.

The Contractor shall use RMS-QC to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC Comments. The contractor shall maintain a current log of its QC comments in the RMS-QC database. The Government will log the deficiencies it has identified using its QA comments. The Government's QA comments will be included in its export file to the Contractor. The contractor will acknowledge receipt of these QA comments by specific number reference on the Daily CQC Report. The Contractor shall regularly update the correction status of both QC and QA comments.

1.6.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS-QC.

1.6.3.4 Accident/Safety Tracking.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize RMS-QC to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 200.

1.6.3.5 Features of Work

The Contractor shall include a complete list of the features of work in the RMS-QC database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.6.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC Testing, Transfer Property listings, Installed Property listings, and User Training requirements in RMS-QC, all tied to individual pay activities. The Contractor shall update all data on these QC requirements as work

progresses, and shall promptly provide this information to the Government via RMS-QC.

1.6.4 Submittal Management

The contractor will initially be required to enter all required submittal information into RMS-QC. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns as described in Section 01330, SUBMITTAL PROCEDURES. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use RMS-QC to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using RMS-QC. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.6.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts", or Section 01320, PROJECT SCHEDULE, as applicable. This schedule shall be input and maintained in the RMS-QC database either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01320 PROJECT SCHEDULE). The contractor shall be responsible for ensuring the SDEF is in the format required to upload the data to the RMS-QC Module; otherwise, the contractor will be required to enter the data manually. The updated schedule data shall be included with each pay request submitted by the Contractor.

1.6.6 Import/Export of Data

RMS-QC includes the ability to export Contractor data to the Government and to import Government-provided data.

1.7 IMPLEMENTATION

Contractor use of RMS-QC as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its RMS-QC database, and to provide the Government with regular database updates. RMS-QC shall be an integral part of the Contractor's management of quality control.

1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the RMS-QC built-in export function. If used, diskettes and CD-ROMs will be submitted in accordance with the following:

1.8.1 File Medium

The Contractor shall submit required data on 3-1/2" double-sided high-density diskettes formatted to hold 1.44 MB of data, capable of running under Microsoft Windows 95 or newer. Alternatively, CD-ROMs may be used. They shall conform to industry standards used in the United States. All data shall be provided in English.

1.8.2 Disk or CD-ROM Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the RMS-QC file name, full contract number, project name, project location, data date, name and telephone number of person responsible for the data.

1.8.3 File Names

The Government will provide the file names to be used by the Contractor with the RMS-QC software.

9. WEEKLY SUBMISSION OF EXPORT FILES

The contractor shall, at a minimum, generate and submit weekly export file to the Gov't.

1.9 MONTHLY COORDINATION MEETING

The Contractor shall update the RMS-QC database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable RMS-QC export file is received.

1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. The RMS-QC Module shall be completed to the satisfaction of the Contracting Officer prior to any contract payment (except for Bonds, and Insurance, as approved by the Contracting Officer).

-- End of Section --

SECTION 01330

SUBMITTAL PROCEDURES
(CENAN-CO-CQ 6/02)

PART 1 GENERAL

1.1 SUMMARY

This section covers procedures to be used in making submittals called for in the contract documents. In contracts which contain specific "Contractor Quality Control" requirements, the Contractor's Quality Control Representative shall carry out duties associated with submittal procedures. In contract which do not contain specific CQC requirements, reference to "CQC Representative" shall be interpreted as reference to the Contractor's authorized representative, and references to "CQC Requirements" or "CQC Clauses" shall be interpreted as "requirements or clauses elsewhere in the contract."

1.2 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

SD-02 Shop Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

SD-03 Product Data

Preprinted manufacturer material describing a product, system, or material, such as catalog cuts.

SD-04 Samples

Samples, including both fabricated and un-fabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

SD-05 Design Data

Submittals, which provide calculations, descriptions, or documentation regarding the work.

SD-06 Test Reports

Reports of inspections or tests, including analysis and interpretation of test results.

SD-07 Certificates

Statement signed by an official authorized to certify on behalf of the manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements. The statement must be dated after the award of the contract, must state the Contractor's name and address, must name the project and location, and must list the specific requirements, which are being certified.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material; including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

SD-09 Manufacturer's Field Reports

Daily reports from specially suppliers to the contractor that provide information, data, tests result for a product.

SD-10 Operation and Maintenance Data

Data, which forms a part of an operation and maintenance manual.

SD-11 Closeout Submittals

All data, documentations, information, and drawings to achieve contract closeout.

SD-12 Schedules

All data, documentations, information, and drawings to achieve contract closeout.

SD-13 Records

Documentation to record compliance with technical or administrative requirements.

1.3 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.3.1 Government Approved/Acceptance (G)

Government approval is required for all specification submittal items found in specifications having structural steel connections, extensions of design, Fire Protection/Life Safety, and Commissioning of HVAC, and other items as designated by the Contracting Officer. Government approval/acceptance (G) is also required for all submittals designated as such in the technical specifications. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings." The Government will review all submittals designated as deviating from the Solicitation or Accepted Proposal, as described below.

1.3.2 Information Only (FIO)

All Contractor submittals not requiring Government approval/acceptance will be for information only. FIO submittals are identified in the approved submittal register Form 4288. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above. FIO Submittals will be retained at the project site and reviewed prior to Preparatory Meetings in accordance with CEGS-01451, CONTRACTOR QUALITY CONTROL.

1.3.3 Government Approval/Acceptance (G)

All submittals classified for Government Approval/Acceptance (G) are identified in the approved submittal register Form 4288. A code following the "G" designation indicates the approving authority; codes of "RE" for Resident Engineer approval, "ED" for Engineering approval, and "AE" for Architect-Engineer approval.

1.4 APPROVED/ACCEPTANCE SUBMITTALS

The Contracting Officer's approval/acceptance of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.5 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.6 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

PART 2 PRODUCTS (Not used)

PART 3 EXECUTION

2.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the Contractor's Quality Control CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

2.2 SUBMITTAL REGISTER (ENG FORM 4288)

At the end of this section is one set of ENG Form 3288 listing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. Columns "d" through "r" have been completed by the Government; the Contractor shall complete columns "a" "b" and "s" through "aa" and submit the forms (hard copy plus associated electronic file) to the Contracting Officer for approval within 30 calendar days after Notice to Proceed (15 days if construction time is 180 days or less). If the Quality Control System (QCS) Module is required to be utilized on this contract as required by Spec. Section 01312 Quality Control System, then the contractor will be required to process and update the 4288 electronically, and make appropriate electronic submissions to the Government. Otherwise, the Contractor shall enter the submittal register in an appropriate electronic format such as MS Excel, manually. In both cases, the Contractor shall update the 4288 electronically, and shall submit it to the Government together with the monthly payment request. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated. NOTE: The Contractor is required to add additional entries to the Submittal

Register for all items requiring multiple submittals, including Formwork Shop Drawings per Lift, Concrete Reinforcement per Lift, Concrete Lift Drawings per Lift, Multiple Shop Assembly Drawings, etc. These entries should be made prior to original submission of the submittal register within 30 days of Notice to Proceed.

2.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. An additional 10 calendar days shall be allowed and shown on the register for review and approval of submittals for food service equipment, refrigeration and HVAC control systems, computer software for specialty systems, electrical substations, and studies including electrical system coordination studies.

2.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved/accepted and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

2.5 [Enter Appropriate Subpart Title Here]

If the contractor is required in another section of the specifications to utilize the Quality Control System (QCS), the contractor will be required to generate and process this form electronically using the QCS System.

2.6 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

2.6.1 Procedures

At the Quality Control Coordination meeting, or preconstruction conference, the Contractor shall ascertain the name and address of each individual, agency, or firm who is designated to normally receive items for approval, for information or samples. The contractor shall complete ENG Form 4025, entering each item requiring a separate approval action as a separate item on the form, for each transmittal. A transmittal may consist of one or more 4025 sheets. The transmittal, consisting of ENG Form 4025 plus all applicable submittals, is then sent to the appropriate individual. On critical items the Contractor is encouraged to confirm receipt via telephone. The Contractor shall submit seven copies of submittals for approval and one for items for information.

2.6.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

2.7 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

2.8 GOVERNMENT APPROVED/ACCEPTANCE SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval/accepteance by being so stamped and dated. Four copies of the submittal will be retained by the Contracting Officer and three copies of the submittal will be returned to the Contractor.

2.9 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACATOR
(Firm Name)
___ Approved
___ Approved with corrections as noted on submittal data and/or attached sheet(s).
SIGNATURE: _____
TITLE: _____
DATE: _____

-- End of Section --

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO.

SECTION 1 - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL
SPECIFICATION SEC. NC *(Cover onlv one section with each transmittal)*	PROJECT TITLE AND LOCATION		CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☐ GOV'T APPROVAL

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR COTRA. CAT., CURVE DRAWINGS OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No.6)* *h.*	FOR CE USE CODE *I*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS	I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.
	NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURE RETURNED *(List by Item No.)*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

ENG FORM 4025-R, MAR 95 *(ER 415-1-10)* EDITION OF SEP 93 IS OBSOLET SHEET --- OF --- (Proponent: CEMP-CE)

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittal under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effort shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted

B -- Approved, except as noted on drawings.

C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required.

D -- Will be returned by separate correspondence.

E -- Disapproved (See attached).

F -- Receipt acknowledged.

FX -- Receipt acknowledged, does not comply
as noted with contract requirements.

G -- Other (Specify)

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION

Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION

01355A

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	CLASSIFICATION: GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.7	Environmental Protection Plan	X											X	A									

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
02210a

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	CLASSIFICATION: GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			3.6	Drilling Log												X	A									
			1.5	Permits, Certifications, and Licenses											X											
			1.5	Schedule of Drilling, Sampling												X	A									

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION

Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION

02230

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			3.5.1	Materials Other Than Salable Timber											X											

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
02300a

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.5	Earthwork												X	A									
			3.10	Testing			X									X	A									
			3.10	Testing				X							X											

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
02371a

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL										CLASSI-FICATION		REVIEWER r.	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		REMARKS aa.
					DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	INFORMATION ONLY p.	GOVERNMENT APPROVED q.		SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	CODE y.	DATE z.	
			1.4	Gabions		X										X	A									
			2.1.2	Alternative Wire Fasteners		X										X	G									
			2.1.2	Alternative Wire Fasteners			X									X	A									
			2.1.4	Stone Fill				X								X	A									

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
02378a

ACTIVITY NO a.	TRANSMITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERNMENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			2.1.1	Geotextile		X									X											
			2.1.1	Geotextile				X							X											

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
02381

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.3	Riprap Quality and Density						X						X	A									
			1.3	Source of Rock						X						X	A									

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
02455a

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	CLASSIFICATION: GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	CONTRACTOR SCHEDULE DATES: APPROVAL NEEDED BY t.	CONTRACTOR SCHEDULE DATES: MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	CONTRACTOR ACTION: DATE w.	CONTRACTOR ACTION: SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	GOVERNMENT ACTION: DATE z.	REMARKS aa.
			1.4	Installation												X	E									
			1.4	Drilling Pile Casings																						
			1.4																							
			3.3	Caissons												X	E									
			1.6	Equipment												X	A									
			1.4	Penetration Tests			X									X	A									
			3.3	Caissons				X								X	A									
			1.4	Qualifications				X								X	A									

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
02464a

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			2.1	Metal Sheet Piling												X	E									
			3.1.2.2	Driving												X	E									
			3.1.1	Pile Driving Equipment												X	E									
			3.1.5	Pulling and Redriving												X	A									
			1.3	Interlocked Joint Strength in Tension												X	E									
				Test																						
			2.3.1	Materials Tests			X									X	E									

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
03307a

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			2.1.3.1	Air-Entraining Admixture												X	E									
			1.2	Accelerating Admixture												X	E									
			1.2	Water-Reducing or Retarding												X	E									
				Admixture																						
			2.1.11	Curing Materials												X	E									
			2.1.5	Reinforcing Steel												X	E									
			2.1.6	Expansion Joint Filler Strips,												X	E									
				Premolded																						
			2.1.7	Joint Sealants - Field Molded												X	E									
				Sealants																						
			2.1.8	Waterstops												X	E									
			3.2	Conveying and Placing Concrete												X	E									
			2.1.9	Formwork												X	E									
			2.1.2	Aggregates			X									X	E									
			1.4.3	Concrete Mixture Proportions			X									X	E									
			2.1.1	Cementitious Materials				X								X	E									
			2.1.2	Aggregates				X								X	E									

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION

Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION

05055a

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.3	Shop Fabricated Metal Items												X	E									
			2.1	Miscellaneous Metals and Standard												X	E									
				Metal Articles																						
			1.3	Shop Fabricated Metal Items												X	E									
			3.2.3	Structural Steel Welding Repairs												X	E									
			1.3	Materials Orders												X	A									
			1.3	Materials List												X	E									
			1.3	Shipping Bill												X	A									
			2.1	Miscellaneous Metals and Standard		X										X	E									
				Metal Articles																						
			1.3	Shop Fabricated Metal Items		X										X	E									
			2.1	Miscellaneous Metals and Standard			X									X	E									
				Metal Articles																						
			1.3	Shop Fabricated Metal Items			X									X	E									
			1.4.4.2	Application Qualification for Steel				X								X	A									
				Studs																						

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
06100a

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.2	Timber Curb												X	E									
			2.1.1	Grading and Marking				X								X	A									

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
09805

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.5	Testing Laboratory				X								X	A									
			1.5	Coating System				X								X	A									
			1.5	Material Compliance				X								X	A									
			1.5	Pile Cleaning				X								X	A									

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Marist College, Hudson River Bulkhead Project, Poughkeepsie, NY

CONTRACTOR

SPECIFICATION SECTION
13110A

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.5	Catalog Cut Sheets		X										X	A									
			1.5	Material Compliance				X								X	A									
			1.5	Test Reports			X									X	A									

SECTION 01355A

ENVIRONMENTAL PROTECTION
02/02

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. ARMY (DA)

AR 200-5	Pest Management

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328	Definitions
40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 152 - 186	Pesticide Programs
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171 - 178	Hazardous Materials Regulations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps on Engineers Safety and Health Requirements Manual
WETLAND MANUAL	Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners,excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.5 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers,creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.2.6 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.7 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, A

The Contractor shall submit an environmental protection plan within 15 days after receipt of the notice to proceed.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the

site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

The Contractor shall submit an overall construction sequence. The following activities will be included within the construction sequence and shall be identified as being the first task accomplishing prior to commencement of construction operations: 1. Delineation of the limits of disturbance; 2. Installation of proposed methods to protect features to be preserved; 3. Installation of erosion control measures.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

c. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan.

d. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.

e. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

f. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

g. Drawing showing the location of borrow areas.

h. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1 [and the [_____]]. This plan shall include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and [the local Fire Department] [Facility Fire Department] [Facility Response Personnel] [Facility Environmental Office] in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

3. Training requirements for Contractor's personnel and methods of accomplishing the training.

4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

i. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic yards or tons along with the percent that was diverted.

j. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

k. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

l. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

m. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has

approved the flow rate, volume, and type of discharge.

n. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.

o. A Stage 1A archaeological study has been performed for this site. There are no known historical, archaeological or cultural resources, except as noted on the plans.

p. A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations, and permits.

1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached,as an appendix, to the Environmental Protection Plan.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.9 SPECIAL ENVIRONMENTAL REQUIREMENTS

The Contractor shall comply with the special environmental requirements listed in Department of the Army Permit No. 1998-07090 which is included at the end of this section.

1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings,plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.11 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

3.1.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking

and/or protecting particular objects.

3.1.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.1.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install turbidity curtains, temporary and permanent erosion and sediment control best management practices (BMPs) as indicated on the drawings. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. Any temporary measures shall be removed after the area has been stabilized.

3.1.4 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.2 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.3 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and

performance laws and standards.

3.3.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.3.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.3.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the State of [_____] rules.

3.3.4 Burning

[Burning shall be prohibited on the Government premises.] [Burning will not be allowed on the project site unless specified in other sections of the specifications or authorized in writing by the Contracting Officer. The specific time, location, and manner of burning shall be subject to approval.] [Fires shall be confined to a closed vessel, guarded at all times, and shall be under constant surveillance until contents have burned out or have been extinguished.] [Burning shall completely reduce the materials to ashes.]

3.4 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.4.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal

shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. [The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.] [Waste materials shall be hauled to the Government landfill site [shown on the drawings] [designated by the Contracting Officer].] [The Contractor shall comply with [site procedures] [Federal, State, and local laws and regulations] pertaining to the use of landfill areas.]

3.4.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.4.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall transport Contractor generated hazardous waste off the project site prior to applying for final payment in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer, the Fairview Fire Department and the Marist College Director of Facilities. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

3.4.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be

conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. There shall be no storage of fuel on the project site. Fuel must be brought to the project site each day that work is performed.

3.4.5 Waste Water

Disposal of waste water shall be as specified below.

a. Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water off the project site by collecting and placing it in a retention pond where suspended material can be settled out and/or the water can evaporate to separate pollutants from the water. The site for the retention pond shall be coordinated and approved with the Contracting Officer. The residue left in the pond prior to completion of the project shall be removed and disposed off-Government property in accordance with Federal, State, and local laws and regulations. The area shall be backfilled to the original grade, top-soiled and seeded/sodded.

3.5 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs.

3.6 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. The Contractor shall submit a report to the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that non-hazardous solid waste has been generated. The following shall be included in the report:

a. Construction and Demolition (C&D) Debris Disposed = [_____] in cubic yards or tons, as appropriate.

b. Construction and Demolition (C&D) Debris Recycled = [_____] in cubic yards or tons, as appropriate.

c. Total C&D Debris Generated = [_____] in cubic yards or tons, as appropriate.

d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = [_____] in cubic

yards or tons, as appropriate.

3.7 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area are shown on the drawings. The Contractor shall protect these resources and shall be responsible for their preservation during the life of the Contract.]If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.8 BIOLOGICAL RESOURCES

The project lies within the buffer area of the Poughkeepsie Deepwater Habitat, a designated significant coastal fish and wildlife habitat by the New York State Department of State. The Contractor will be responsible for ensuring that consideration is given to prevent adverse impacts to the habitat and buffer areas and adhering to the guidelines (i.e. erosion and sediment control installation and maintenance) stipulated within Section 01355 Environmental Protection and Section 01356A Storm Water Pollution Prevention Measures. The Contractor shall be responsible for any violations of the stipulations as determined by the Contracting Officer or any other regulating agency.

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.9 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.10 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor

personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.11 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --

SECTION 01420

SAFETY
nyd 7/01

1.0 SAFETY: The contractor shall comply with all applicable Federal, State, and local safety and occupational health laws and regulations. Applicable provisions of the Corps of Engineers manual entitled Safety and Health Requirements Manual EM 385-1-1, dated 3 September 1996 will be applied to all work under this contract. The referenced manual may be purchased from the Contracting Officer's Representative (COR) at the job site, from the U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328, or via the internet at www.USACE.army.mil.

1.1 U.S. ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385-1-1: This paragraph applies to contracts and purchase orders that require the Contractor to comply with EM 385-1-1 (e.g. contracts that include the Accident Prevention Clause at FAR 52.236-13 and/or safety provisions). EM 385-1-1 and its changes are available at http://www.hq.usace.army.mil (at the HQ homepage, select Safety and Occupational Health and then select Changes to EM). The Contractor shall be responsible for complying with the current edition and all changes posted on the web as set in this solicitation.

2.0 ACCIDENT PREVENTION PROGRAM: Within fifteen (15) calendar days after receipt of Notice to Proceed, and at least ten (10) calendar days prior to the Preconstruction Safety Conference, four (4) copies of the Accident Prevention Plan shall be submitted for review and acceptance by the Contracting Officer or the Contracting Officers Representative (COR). The accident prevention program shall be prepared in the format outlined in Appendix A of EM 385-1-1, "Minimum Basic Requirements for Accident Prevention Plan".

3.0 HAZARD ANALYSIS: Prior to beginning each major phase of work, an Activity Hazard Analysis shall be prepared by the Contractor performing that work, and submitted for review and acceptance. The format shall be in accordance with EM 385-1-1, figure 1-1. A major phase of work is defined as a operation involving a type of work presenting hazards not experienced in previous operations or where a new contractor or work crew is to perform. (See Contractor Quality Control specification for further guidance regarding coordination of "Activities" and "Principal Steps" indicated in the Activity Hazard Analysis with Contractor Quality Control activities). The analysis shall define the activities to be performed and identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the activity hazard analysis has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the government on-site representative(s). The activity hazard analyses shall be continuously reviewed and when appropriate modified to address changing site conditions or operations, with the concurrence of the site safety representative, the site superintendent, and the Contracting Officer.

Activity hazard analyses shall be attached to and become part of the accident prevention plan. It may also be developed prior to each phase of work undertaken in the contract.

3.1 Hazard analysis shall be used to identify and evaluate all substances, agents, or environments that present hazards and recommend control measures. Engineering and administrative controls shall be used to control hazards; in cases where engineering or administrative controls are not feasible, personal protective equipment may be used.

3.2 Information contained in MSDS (Material Safety Data Sheets) shall be incorporated in the hazard analysis for the activities in which hazardous or toxic materials will be used, or generated (e.g. fiberglass, crystalline silica, metal dust or fume, etc.).

4.0 SITE SAFETY OFFICER : The contractor shall identify an individual directly employed by the contractor as Site Safety Officer responsible to the Contractor to implement and continually enforce the Accident Prevention Plan. The site safety officer shall not be the same individual as the Quality Control System Manager if the CQC System Manager is required to have no duties other than Quality Control. The site safety officer shall have the authority to suspend operational activities if the health and safety of personnel are endangered, and to suspend an individual from operational activities for infractions of the Accident Prevention Plan.

4.1. Qualifications: The name, qualifications (training and experience) of the designated Site Safety Officer shall be included in the Accident Prevention Plan. The Site safety officer shall have the following qualifications:

a. A minimum of 5 years construction experience with at least 2 years experience in implementing safety programs at construction work sites for projects of comparable scope and complexity.

b. Documented experience in construction techniques and construction safety procedures.

c. Working knowledge of Federal and state occupational health and safety regulations.

d. Specific training in excavation safety, fall protection, and confined space.

e. CPR/First Aid certification (current)

f. Familiarity with and ability to use and implement the Corps of Engineers Safety Manual EM 385-1-1.

4.2. Other Requirements: Other sections of the contract documents may also require separate specially qualified individuals in such areas a chemical data acquisition, sampling and analysis, medical monitoring, industrial hygiene, quality control, etc.

5.0 SITE INSPECTIONS: The site safety officer shall perform daily

inspections of the job sites and the work in progress to ensure compliance with EM 385-1-1 and to determine the effectiveness of the accident prevention plan. Daily inspection logs shall be used to document inspections noting safety and health deficiencies, deficiencies in the effectiveness of the accident prevention plan, and corrective actions including timetable and responsibilities. The daily inspection logs will be attached to and submitted with the Daily Quality Control Reports or may be incorporated in the daily CQC report. Each entry shall include date, work area checked, employees present in work area, protective equipment and work equipment in use, special safety and health issues and notes, and signature of the preparer.

6.0 HIGHLIGHTED PROVISIONS: In addition to those items contained in EM 385-1-1, Appendix A, include the following items in the accident prevention plan:

6.1 Hard Hat Area. A statement that the jobsite is classified a "hard hat" area from start to finish.

6.2 Sanitation and Medical Requirements. Estimate the greatest number of employees, supervisors, etc., to be working at peak construction period, including subcontractor personnel. Include sanitation requirements and medical facilities identified for the job site. If a medical facility or physician is not accessible within five minutes of an injury to a group of two or more employees for the treatment of injuries, identify at least two or more employees on each shift who are qualified to administer first aid and CPR.

6.3 Equipment Inspection. The type of inspection program on cranes, trucks, and other types of construction equipment the Contractor plans to implement. Who will be responsible for the inspection and how the Contractor will control equipment of sub-contractors and equipment bought to the site by rental companies. Types of records to be kept.

6.3.1 Copies of records of all equipment inspections will be kept at the job site for review by the designated authority.

6.4 Crane & Derrick Operators: Written proof of qualification for all crane and derrick operators in accordance with EM 385-1-1, 16.C.04. Qualification shall be by written (or oral) examination and practical operating examination unless the operator is licensed by a state or city licensing agency for the particular type of crane or derrick. Proof of qualification shall be provided by the qualifying source.

7.0 ACCIDENT REPORTS: The contractor shall immediately report all accidents by telephone to the COR.

7.1 The Contractor will provide an initial written report of the accident to the COR within 24 hours. The Contractor shall complete and submit ENG Form 3394 for all accidents involving lost work time, medical treatment, and/or property damage in excess of $2000.00 within 48 hours of the accident. The report shall accurately represent the circumstances of the accident, cause of the accident, extent of medical treatment, extent of injuries and steps to prevent occurrence of similar accidents. The hazard analysis covering the work activity being undertaken during the accident shall be attached to the

report.

7.2 Daily records of all first aid treatment not otherwise reportable shall be maintained at the job site and furnished to the designated authority upon request. Records shall also be maintained of all exposure and accident experience incidental to the work (OSHA Form 300 or equivalent as prescribed by 29 CFR 1904).

8.0 MONTHLY EXPOSURE REPORTS: The Contractor shall submit to the COR no later than the 1st day of each month, a compilation of manhours worked each month by the prime contractor and each subcontractor. In addition ,the contractor shall report the number of accidents, severity, class of accidents, and lost time work days for each month.

9.0 CLEAN-UP: The Contractor's Accident Prevention Plan shall identify the individual's responsible for cleanup and shall establish a regular housekeeping procedure and schedule. If the COR determines that cleanup is not being performed satisfactorily, the Contractor shall establish a work crew to perform the continuous cleanup required by the contract clause titled: CLEANING UP: The number of individuals appointed to the cleanup work crew shall be increased as required in order to render adequate cleanup.

10.0 FOCUS AREAS: To supplement and emphasize the requirements of EM 385-1-1, the following is provided and shall be met as applicable.

10.1 Electrical Work: Electrical work shall not be performed on or near energized lines or equipment unless specified in the plans and specifications and approved by the COR. Plan and layout of proposed temporary power to the construction site shall be submitted and approved by the COR before work will be permitted.

10.1.1 Upon request by the Contractor, arrangements will be made for de-energizing lines and equipment so that work may be performed. All outages shall be requested through the COR a minimum of 14 days, unless otherwise specified, prior to the beginning of the specified outages. Dates and duration will be specified.

10.2 If approved by the COR, the following work may be performed with the lines energized using certified hot line equipment on lines above 600 volts, when the following conditions have been met:

a. work below the conductors no closer than the clearance required in EM 385-1-1 from the energized conductors.

b. setting and connection of new pre-trimmed poles in energized lines which do not replace an existing pole.

c. setting and removing transformers or other equipment on poles.

d. installation or removal of hot line connectors, jumpers, dead-end insulators for temporary isolation, etc., which are accomplished with hot line equipment from an insulated bucket truck.

10.3 Energized Line Work Plan: The Contractor shall submit a plan, in

writing, describing his/her method of operation and the equipment to be used on energized lines. Proper certification from an approved source of the safe condition of all tools and equipment will be provided with the plan. The work will be planned and scheduled so that proper supervision is maintained. Emergency procedures, including communication, for disconnecting power in the event of an accident will be outlined in the plan. The Contractor will review his/her plan with the COR prior to being granted permission to perform the work.

10.4. No work on lines greater than 600 volts will be performed from the pole or without the use of an insulated bucket truck.

10.5 No work will be done on overbuilt lines while underbuilt lines are energized, except for temporary isolation and switching.

10.6 Electrical Tools and Cords: Hand held electrical tools shall be used only on circuits protected by ground fault circuit interrupters for protection of personnel. All general use extension cords shall be hard usage or extra hard usage as specified in Table 11-1 of EM 385-1-1. Damaged or repaired cords shall not be permitted.

10.8 Temporary Power: Temporary electrical distribution systems and devices shall be checked and found acceptable for polarity, ground continuity, and ground resistance before initial use and after modification. GFI outlets shall be installed and tested with a GFI circuit tester (tripping device) prior to use. Portable and vehicle mounted generators shall be inspected for compliance with EM 385-1-1 and NFPA 70. All electrical equipment located outdoors or in wet locations shall be enclosed in weatherproof enclosures in accordance with EM 385-1-1. Records of all tests and inspections will be kept by the contractor and made available on site for review by the designated authority. Submit sketch of proposed temporary power for acceptance.

10.9 Rollover Protective Structures (ROPS): Seat belts and ROPS shall be installed on all construction equipment as required by paragraph 16.B.12 of EM 385-1-1. The operating authority will furnish proof from the manufacturer or licensed engineer that ROPS meets the applicable SAE standards cited in EM 385-1-1, pg. 257.

10.10 Radiation Permits or Authorizations: Contractors contemplating the use of a licensed or DOD regulated radiological device or radioactive material on a DOD installation will secure appropriate permit or authorization from the Department of Army or Department of the Air Force, as applicable. A 45-day lead-time should be programmed for obtaining the necessary authorization or permit. When requested, the COR will assist the Contractor in obtaining the required permit or authorization.

10.10.1 The Contractor shall develop and implement a radiation safety program to comply with EM 385-1-1, Section 06.E. Provisions for leak tests, authorized personnel, transport certificates, etc. will be addressed in the radiation safety program.

10.11 Elevating Work Platforms: All elevating work platforms shall be designed, constructed, maintained, used, and operated in accordance with ANSI

A92.3, ANSI A92.6, ANSI A92.5 and EM 385-1-1, Sections 22.J and 16.A.

10.11.1 Only personnel trained in the use of elevating work platforms shall be authorized to use them. A list of authorized users will be maintained by the contractor at the job site. The list will be updated to remain current and made available for review on site by the designated authority. Personnel safety belts must be worn.

10.12 Fall Protection: Fall protection in the form of standard guardrails, nets, or personal fall arrest systems will be provided for all work conducted over 6 feet in height The contractor will submit his/her proposed method of fall protection to the COR as part of the Job Hazard Analysis for acceptance. If the contractor deems that conventional fall protection as described above is not feasible, or creates a greater hazard, the Contractor will prepare a written fall protection plan in accordance with OSHA 29 CFR 1926.502(k). The plan will demonstrate the reasons that conventional fall protection is unfeasible or constitutes a greater hazard and will provide alternative safety measures for review and acceptance by the COR.

10.13 Excavations: All open excavations made in the earth's surface four (4) foot or greater will be under the supervision of a competent person trained in, and knowledgeable about, soils analysis, the use of protective systems, and the requirements of OSHA 29 CFR 1926, Subpart P and EM 385-1-1, Section 25. The competent person shall be designated in writing by the Contractor and a resume of their training and experience submitted to the COR for acceptance.

10.13.1 Excavations hazards and methods for their control will be specified in the job hazard analysis.

10.13.2 Sloping and benching: The design of sloping and benching shall be selected from and in accordance with written tabulated data, such as charts and tables. At least one copy of the tabulated data will be maintained at the job site.

10.13.3 Support Systems: shall be in accordance with one of the systems outlined in a through c below:

a. Designs drawn from manufacturer's specifications and in accordance with all specifications, limitations, and recommendations issued or made by the manufacturer. A copy of the manufacture's specifications, recommendations, and limitations will be in written form and maintained at the job site.

b. Designs selected from and in accordance with tabulated data (such as tables and charts). At least one copy of the design shall be maintained at the job site during excavation.

c. Designed by a registered engineer. At least one copy of the design shall be maintained at the job site during excavation.

10.13.4 Excavations Greater than 20 Feet in Height: Sloping and benching or support systems shall be designed by a registered professional engineer. Designs shall be in writing and at least one copy of the design shall be maintained at the job site during excavation. The contractor will ensure that

the registered professional engineer is working within a discipline applicable to the excavation work; i.e. it would be inappropriate for an electrical engineer to approve shoring designed for an excavation.

10.14 Confined Space: Entry into and work in a confined space will not be allowed when oxygen readings are less than 19.5% or greater than 23.5% or if the lower explosive limit (LEL) reading is greater than 10%, unless these conditions are adequately addressed in the confined space entry plan. In addition, action levels for toxic atmospheres shall be determined and any other known or potential hazards eliminated prior to entry.

11.0 LANGUAGE: For each group that has employees that do not speak English, the Contractor will provide a bilingual foreman that is fluent in the language of the workers. The contractor will implement the requirements of EM 385-1-1, 01.B through these foremen.

12.0 CONTRACTOR SAFETY MEETINGS AND DOCUMENTATION: Contractor shall conduct and document safety meetings among its personnel as required by EM 385-1-1 and as indicated herein. Monthly meetings shall be held among all supervisors, and weekly meetings shall be conducted by supervisors or foreman for all workers. The agenda of the meeting shall include specific safety items pertinent to work being performed. Documentation shall include a summary of items discussed as well as other items required by the EM 385-1-1. Documentation shall be submitted to the Government monthly.

13.0 COORDINATION WITH OTHER SPECIFICATION SECTIONS: The requirements of this section are meant to supplement requirements of other sections. In cases of discrepancies the most stringent requirements shall apply . Other safety-related requirements can be found in the following specification sections:

a. Specification Section 00800, Special Contract Requirements

b. Specification Section 00700, Contract Clauses, paragraph entitled "accident Prevention"

c. Specification Section entitled "Contractor Quality Control"

d. Other specifications or contract requirements relating to site safety or health requirement or medical monitoring.

14.0 CONTRACTOR PERFORMANCE APPRAISAL: The occurrence of accidents and near misses due to negligence are strong indications that there has been insufficient emphasis on effective implementation and/or commitment to the accident prevention program. Should it become obvious that only lip service is being given to this program, an interim unsatisfactory performance appraisal rating will be issued. If safety continues to be unsatisfactory or marginal, the unsatisfactory rating will become final. The contractor should be aware that this appraisal will be stored in a national computer database which can be accessed by a multitude of agencies or municipalities desiring information on prospective contractors. An unsatisfactory rating in this database may affect the contractor's ability to obtain future Government work.

-End-

SECTION 01451A

CONTRACTOR QUALITY CONTROL
NYD Edition 12/99

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(1996) Evaluation of Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(1995b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump- sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

2.1 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause entitled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and off site, and shall be keyed to the proposed construction sequence. For purposes of this section the term "construction" shall include all items of work, activities, materials and equipment as indicated in the contract documents. Other sections of the contract documents may also require separate, specially qualified individuals in such areas as chemical data acquisition, sampling and analysis, medical monitoring, industrial hygiene, safety officer, etc. The CQC organization will coordinate the activities of these individuals. The project superintendent will be held responsible for the

quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The project superintendent in this context shall mean the on-site individual with the responsibility for the overall management of the project including logistics and production.

2.2 QUALITY CONTROL PLAN

2.2.1 General

The Contractor shall furnish for review by the Government, not later than 90 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause entitled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan for the first 90 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

2.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and off site, including work by subcontractors, fabricator, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing
lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to an officer in the Contractor's organization above the Project Superintendent, who is responsible for both quality and production.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function. Clear indication that CQC System Manager will have no duties other than Quality Control.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters will also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, off site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance

with Section 01330 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.) The Contractor shall incorporate all tests required by the contract (including systems commissioning and operating tests) to derive the above list of testing information which shall be presented in matrix form as part of the CQC Plan. This matrix shall be suitable for use by the Contractor and the Government as a checklist to control testing to be done on the contract. Coordinate any additional test submission or plan requirements for Mechanical and Electrical Systems with appropriate specialized specification section if applicable.

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation. Provide matrix of Preparatory and Initial Inspections including specification reference paragraph, the name of the Definable Feature of Work, and spaces for date performed, results, and names of attendees.

g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks and has separate control requirements. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there is frequently more than one definable feature under a particular section. This list will cover all features of work on the project, and will be agreed upon during the coordination meeting.

j. A brief explanation of the duties of the CQC organization with respect to safety. Note that separate Accident Prevention Plan and Hazards Analysis is required for submission and acceptance.

k. Contractor's plan for training all CQC personnel in the CQC System.

2.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

2.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

2.3 COORDINATION MEETING

After the Pre-construction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 14 calendar days prior to the Coordination Meeting. The initial plan submitted must be found acceptable by the Government before the Coordination Meeting can be held. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and off site work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

2.4 QUALITY CONTROL ORGANIZATION

2.4.1 General

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure contract compliance. The number of CQC personnel shall be increased as required during times of high construction workload. The Contractor shall provide a CQC organization which shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer.

2.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within his organization at the site of the work who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, or shall hold a state Professional Engineer's license, with a minimum of 2 years construction experience on construction similar to this contract, one year of which as a Quality Control Representative. The CQC Manager may also be a construction person with a minimum of 4 years in related work, one year of which as a QC Representative. This CQC System Manager shall be on the site at all times during construction and will be employed by the prime Contractor. An alternate for the CQC System Manager will be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate will be the same as for the designated CQC

System Manager. The CQC System Manager shall be assigned no duties other than Quality Control.

2.4.3 Organizational Expertise

The CQC organization, which includes the CQC System Manager and additional qualified personnel, must as a minimum possess general corporate technical knowledge of all aspects of the project, and must successfully execute the CQC System on all aspects of the project. Individuals possessing experience in specialized areas shall be added to the organization as required during periods when such specialty areas are being executed. Examples of such specialized areas would include HVAC, electrical distribution and substations, roofing, tele-communication systems, fire protection and alarm systems, computer installations, specialized welding, specialized finishes, precast concrete installation, modular housing, specialized geotech work, dredging, sand placement and surveying, chemical data acquisition, hazardous material removal and disposal, medical monitoring, etc., depending on the nature of the particular project. The Contractor must demonstrate that such additional qualified personnel have received sufficient training and indoctrination into the CQC system, and that these personnel properly execute the requirements of the CQC System within their areas of expertise.

2.4.4 Additional Requirement

In addition to the above experience and education requirements the CQC System Manager shall have completed within the last five years the course entitled "Construction Quality Management for Contractors". This course is given at a cost of $25 by Government personnel and is of two-day duration. The Government will provide one instruction manual for the course.

2.4.5 Organizational Changes

The Contractor shall maintain the CQC Organization at full strength at all times. When it is necessary to make changes to the organization, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

2.5 SUBMITTALS

Submittals shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements and are submitted in accordance with the date on the submittal register. CQC personnel shall also make physical checks of materials and equipment before installation to insure compliance with approved shop drawings.

2.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

2.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work after all required plans/documents/materials are approved/accepted, and after copies are at the worksite, and shall include:

a. A review of each paragraph of applicable specifications.

b. A review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to assure safety requirements are met per EM 385-1-1, "Safety and Health Requirements Manual".

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase meeting. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall clearly indicate its intent and plan for communication of the results of the preparatory phase to applicable workers, to include materials, construction methods, workmanship standards, safety considerations and procedures, and preparatory phase meeting minutes.

2.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work (DFW) when the accomplishment of a representative sample of the work

is impending.

The following shall be accomplished:

a. A check of the portion of work done to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 48 hours in advance of beginning the initial phase meeting. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), the foreman responsible for the definable feature and the work crew(s) for the appropriate DFW. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location (i.e. CQC Report number) of initial phase shall be indicated for future reference and comparison with follow?up phases.

2.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

2.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable feature of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

2.6.5 Definable Feature of Work: Definition and Discussion

A Definable Feature of Work (DFW) is a portion of work consisting of materials, equipment, supplies and procedures which are closely related to

each other, have the same control and will be accomplished by the same work crew to completion. A DFW must be sufficiently small so that control of the work (i.e. communication of requirements to workers, inspection of materials and workmanship and correction of deficiencies) will be easily accomplished. Some examples for various types of projects are:

* Rough-in of electrical boxes and wiring methods

* Lighting fixtures, receptacles, and accessories

* Panelboards, circuit breakers and motors.

* Water supply piping, fittings and supports

* DWV piping, fittings and supports for plumbing

* Concrete reinforcement and formwork

* Concrete mixing, placement, curing and finishing

* Testing Procedure for contaminated soil, materials and storage tank contents

* Storage Tank disassembly and removal

* Setting up of decontamination area, exclusion zones and standard safety procedures for asbestos removal

* Asbestos removal and disposal procedures

* Chemical Data Acquisition

* Preparation, removal and disposal of contaminated material

* Dredging and placement.

2.7 TESTS

2.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a laboratory which has been assurance inspected by the Corps of Engineers within the last two years. The Contractor shall perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, will be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test will be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an off site or commercial test facility will be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

2.7.2 Testing Laboratories

2.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment and calibration in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, aggregate and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329. The Government requires a Corps of Engineers capability check of the laboratory which the contractor proposes to perform tests on soils, concrete, asphalt, aggregate and steel. If the laboratory proposed has not had the required Corps of Engineers capability check within the last two years, it will be performed by the Corps of Engineers at a cost of $7200 to the contractor. This cost will be paid by the Contractor via check directly to the Corps of Engineers Laboratory performing the inspection and report.

2.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of $7200 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory.

2.7.3 On-Site Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

2.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials will be

borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, as designated by the Government Representative. Coordination for each specific test, exact delivery location and dates will be made through the Area Office.

2.8 COMPLETION INSPECTION

2.8.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished the Contractor shall notify the Government that the facility is ready for the Government's "Pre-final" inspection.

2.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is ready to be occupied. A Government "Pre-final Punch List" will be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected and so notify the Government so that a "Final" inspection with the customer can be scheduled. Any items noted on the "Pre-final" inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph will be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

2.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person and the Contracting Officer's Representative will be in attendance at this inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final Inspection. Notice will be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being acceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause entitled "Inspection

of Construction".

2.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.

e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

f. Submittals reviewed, with contract reference, by whom, and action taken.

g. Off-site surveillance activities, including actions taken.

h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

i. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. "N/A" shall be entered into any field for which no entry is intended. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 16 hours after the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every seven days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for

that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. All documentation is expected to be literate, legible and complete.

2.10 SAMPLE FORMS

(Note: If the Quality Control System (QCS) (formally called Resident Management System (RMS)) is required to be used by the contractor for the QC System as indicated elsewhere in this contract, Contractor will generate all reports in the QCS System, and attached forms will serve as guidance only. Otherwise forms contained herein will be used by the CQC Staff for CQC System reporting).

a. The 2-page form at the end of the section will be used for the basic CQC Report. CQC personnel shall attach continuation sheets as required for any entries which cannot fit on the basic form. Preparatory and Initial Inspections, when performed, shall be indicated on the basic CQC report and minutes for each inspection shall be attached. Minutes will consist of a list of specific requirements for materials, procedures or equipment to be employed and shall also include any understandings reached or items of special importance discussed.

b. In addition, outstanding deficiencies shall be listed on the form "List of Outstanding Deficiencies" at the end of this section and shall be attached to each CQC report. As deficiencies are corrected, they are to be acknowledged on the basic CQC report and shall be deleted from the list.

c. Form at the end of this section entitled "CQC Test Report List" shall be used by the Contractor to track testing to be done as the project progresses, and also to summarize the Contractor's Quality Control testing to be reported on the CQC Plan.

d. Form "Record of Preparatory and Initial Inspections" at the end of this section shall be used by the Contractor to track Preparatory and Initial inspections as the project progresses and also to summarize these required inspections as part of the CQC Plan.

e. Additional reporting forms pertaining to specialized activities may be included herein or elsewhere in the contract, and shall be used for reporting as indicated.

2.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages

by the Contractor. Deficiencies cited and verbal instructions given to the Contractor by the Government Representative shall be entered into that day's CQC Report.

(FORMS FOLLOW)

-- End of Section --

RECORD OF PREPARATORY AND INITIAL INSPECTIONS

DATE OF INSP	TYPE OF INSP	DEFINABLE FEATURE OF WORK (DESCRIBE)	REPORT NOS		PERSONS ATTENDING INSP	WAS MATL&/OR EQUIPMENT PHYSICALLY INSPECTED ?
			QA	QC		

NAD FORM 826
22 JULY 86

NOTE:THIS FORM SHALL BE USED BY THE CONTRACTOR TO TRACK PREP/INIT INSP'S
ATTACH ADDITIONAL RESULTS OR COMMENTS AS REQUIRED

LIST OF OUTSTANDING DEFICIENCIES

SH_____ OF _____ DATE:_____

PROJECT TITLE:_____ CONTRACTOR:_____

LOCATION:_____ CQC REPORT#_____ CONTRACT #:_____

SPEC REF OR DWG#	LOCATION ON PROJECT	DESCRIPTION OF DEFICIENCY	DATE FOUND	DATE TO BE CORRECTED	DATE CORRECTED	REMARKS

NOTE: THIS FORM SHALL BE USED BY THE CONTRACTOR TO TRACK OUTSTANDING CONSTRUCTION DEFICIENCIES

CQC TEST REPORT LIST

CQC REPORT#_____ SH_____ OF _____ DATE:_____

CONTRACTOR:_____ CONTRACT #:_____

PROJECT TITLE:_____ LOCATION:_____

SPEC REF OR DWG#	TYPE OF TEST	DATE PERFORMED	RESULTS	REMARKS

NOTE: THIS FORM SHALL BE USED BY THE CONTRACTOR TO TRACK CQC TESTING.PROVIDE ATTACHMENTS AS REQUIRED.

CQC REPORT #_____ Date_____

1. Project Title:_____

Location: _____Contract No.:_____

2. List Contractors and Subs Working This Day and Areas of responsibility of each

_____

_____

_____

_____

3. Weather:

_____

_____

4.Description and Location of Work of the Project (Also indicate days of no work and reasons for delay)

_____

_____

_____

_____

_____

5. Labor and Equipment Breakdown by Trade (Attach Continuation)

_____

_____

_____

_____

6. Preparatory Phase Inspections Held (See Attached Minutes)

_____

_____

_____

_____

_____

7. Initial Phase Inspections Held (See attached minutes)

_____

_____

_____

_____

_____

8. Follow-Up Phase Inspections Performed, Results and Corrective Actions Taken

9. Job Safety. Indicate What Was Checked, Results,Instructions Received and Corrective Actions:

10. Additional Activities and Remarks (Check Appropriate Box)

[ ] a. Testing Performed. Attach Results.
[ ] b. Verbal Instructions Received.
[ ] c. Submittal Actions.
[ ] d. Outstanding Deficiencies. See Attached List
[ ] e. Delivery of Equipment and Materials.
[ ] f. Misc/Remarks.

(Use Space Below To Discribe Checked Items)

11. Contractor's Verification: "The above report and attachments are complete and all supplies, Materials, Equipment and Workmanship incorporated into the work are in full compliance with the contract except as noted".

Signed_____ Date_____
CQC Representative

SECTION 01453

CONTRACTOR WARRANTY MANAGEMENT
02/99

PART 1 GENERAL

1.1 REFERENCES

a. Clause "Warranty of Construction", (FAR 52.246-0021)
b. Clause "Inspection of Construction" (FAR 52.246-12)
c. Special Requirement paragraph entitled "Record Drawings"
d. Specification Section entitled "Contractor Quality Control"

1.2 GENERAL

In order to insure that the Government systematically receives all warranties of construction, equipment and systems to which it is entitled, the contractor shall execute all actions as required by above references and as contained herein.

1.3 POST-COMPLETION INSPECTIONS

For purposes of management of construction warranties, the Government conducts four and nine month warranty inspections with using agencies. The Contractor is encouraged to attend these inspections in order to better manage any warranty items for which it may be responsible.

1.4 TAGGING OF EXTENDED WARRANTY ITEMS

The Contractor shall install tags to identify items protected by extended warranty, i.e. longer than the one year general warranty of construction. The tags shall be minimum 3 inches by 5 inches in size, machine-printed in minimum 14-point type, and shall be weatherproof. Tags shall be attached to equipment if accessible or to accessible control panel, etc. As a minimum, tags shall indicate the following information:

"Extended Warranty Item:"
Name of Item
Name of System with which associated, number designation within system, or other identifier
Model Number
Serial Number
Start and end Dates of Warranty
Contract number
Contract Name
Contractor Name
Point of Contact name, organization and telephone number.

1.5 POSTING OF INSTRUCTIONS

In addition to any posting of operating procedures as may be required elsewhere in this contract, any equipment or system for which proper operation or maintenance is critical in order to preserve warranties, prevent damage, or for reasons of safety shall have proper operating procedures posted near the equipment or near the operating point. Instructions shall be protected by 1/16 inch thick plastic sheet. As a minimum such equipment or system shall include:

Electrical Substations
Transformers
Electrical Generators
Major HVAC System components including chillers, air-handlers, fans, etc.
HVAC Control Panel
Boilers
Air Compressors

1.6 WARRANTY MEETING

At least 14 days prior to the 80% completion point of this contract (or deliverable phase thereof), the contractor will notify the Government representative for the purpose of scheduling a meeting to clarify understandings of responsibilities with respect to warranties to which the Government is entitled. The Government and contractor shall attend the warranty meeting, as well as any subcontractors, or suppliers involved in the warranty process. The Warranty Plan (below) shall have already been submitted and approved by the Government before the warranty meeting can take place, and shall be the basis of the meeting's agenda.

1.7 WARRANTY PLAN

At least 30 days before the planned warranty meeting, the contractor shall submit a warranty plan for Government approval per section "Submittals". The Warranty Plan shall include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The tern "status" as indicated below shall include due date and whether item has been submitted or was accomplished. As a minimum the plan shall indicate:

a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the contractor's, subcontractors or suppliers involved.

b. Listing and status of O&M manuals and As-built drawings, and expected delivery dates.

c. Listing and status of all training to be provided to Government personnel, whether specified by contract or required by manufacturers.

d. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

e. A list for each warranted equipment, item, feature of construction or system indicating:

Name of item
Model and serial numbers.
Location where installed
Names of manufacturers or, suppliers and phone numbers.
Names addresses and telephone numbers of sources of spare parts
Warranties and terms of warranty. This shall include one-year overall warranty of construction as required by ref. 1.a. Clearly indicate which items have extended warranties.
Cross-reference to warranty certificates as applicable
Starting point and duration of warranty period.
Summary of maintenance procedures required to continue the warranty in force.
Cross-reference to specific pertinent Operation and Maintenance manuals
Organization, names and phone numbers of persons to call for warranty service
Typical response time and repair time expected for various warranted equipment

f. The contractor's plans for attendance at the Four and Nine month post-construction warranty inspections conducted by the Government.

g. Procedure and status of tagging of all equipment covered by extended warranties.

h. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons

-- End of Section --

SECTION 02210A

SUBSURFACE DRILLING, SAMPLING, AND TESTING
10/95

PAYMENT ITEM NO. 0014 SUBSURFACE BORINGS

PART 1 GENERAL

1.1 DRILLING

The Contractor shall drill a total of up to eight (8) of borings along the alignment of the two bulkhead segments to determine the top of bedrock (4 at each bulkhead). The total liner footage of all borings drilled shall be no greater than 250 linear feet unless otherwise changed by the Contracting Officer. All borings will be drilled from a drilling barge and measured from mean low water. Each boring shall be drilled to a depth of 30 feet, but not less than 10 feet of embedment below bedrock.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1452	(1980; R 1995) Soil Investigation and Sampling by Auger Borings
ASTM D 1586	(1984; R 1992) Penetration Test and Split-Barrel Sampling for Soils
ASTM D 1587	(1994) Thin-Walled Tube Geotechnical Sampling of Soils
ASTM D 2113	(1983; R 1993) Diamond Core Drilling for Site Investigation
ASTM D 2487	(1993) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2488	(1993) Description and Identification of Soils (Visual-Manual Procedure)

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-1-1906	(1996) Soil Sampling

ROCK TESTING HANDBOK

RTH 111	Unconfined Uniaxial Compression
RTH 325	Point Load Test

1.3 MEASUREMENTS AND PAYMENTS

1.3.1 Mobilization and Demobilization

1.3.1.1 Payment

Payment for all costs associated with mobilization and demobilization of drilling barge at or near the location of caissons will be included in the lump sum payment for the boring, sampling, and testing of subsurface borings. The site shall be restored and all equipment removed from the site.

1.3.1.2 Unit of Measure

Unit of measure: lump sum.

1.3.2 Drive Boring and Sampling

1.3.2.1 Payment

Payment made for costs associated with Drive Sample Boring and Sampling, - 1/2 inch Diameter Samples will be lump sum included in the payment for boring, drilling, sampling, and testing.

1.3.3 Core Drilling and Sampling, Vertical Holes

1.3.3.1 Payment

Payment made for costs associated with Core Drilling and Sampling will be lump sum included in the payment for boring, drilling, sampling, and testing.

1.4 SYSTEM DESCRIPTION

1.4.1 Drive Borings and Sampling

A drive sample boring is a boring made through unconsolidated or partly consolidated sediments or decomposed rock by means of a mechanically driven sampler. The purpose of these borings is to obtain knowledge of the composition, the thickness, the depth, the sequence, the structure, and the pertinent physical properties of foundation or borrow materials. Drive sample boring and sampling shall be performed in accordance with EM 1110-1-1906 or ASTM D 1587. Standard Penetration Tests (SPT) shall be performed in accordance with EM 1110-1-1906 or ASTM D 1586.

1.4.2 Undisturbed Sample Borings and Sampling

An undisturbed sample is made to obtain soil samples which show properties

as close to the in situ (in place) properties as any sample which can be obtained. All undisturbed sampling shall be accomplished in accordance with EM 1110-1-1906 or ASTM D 1587. Undisturbed samples shall be retrieved in clays and cohesive soils that are thick enough to retrieve a two foot or longer sample.

1.4.3 Core Drilling and Sampling

Drilling of cores shall be performed as per ASTM D 2113. The method used shall provide equally good recovery of cores from both hard and soft rocks.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Drilling Log; G, A.

The Contractor shall submit complete, legible copies of DRILLING LOG, ENG FORM 1836 and 1836A and records to the Contracting Officer within 7 days after a hole is completed.

SD-03 Product Data

Permits, Certifications, and Licenses; FIO.

The Contractor shall comply with all Federal, State and local laws, regulations and ordinances relating to the performance of this work. The Contractor shall, at his own expense, procure all required permits, certifications and licenses required of him by Federal, State, and local law for the execution of this work. Copies of all such documents shall be furnished to the Contracting Officer prior to starting work.

Schedule of Drilling, Sampling; G, A.

Prior to starting work, the Contractor shall submit a plan for the boring location, drilling, sampling, and safety. The plan shall include, but not be limited to, the proposed method of drilling and sampling including a description of the equipment and sampling tools that will be used, a listing of any subcontractors to include a description of how the subcontractors will be used and a description of all methods and procedures that will be utilized to insure a safe operation and to protect the environment. This submittal shall also include a statement of the prior experience, in the type of work described in these specifications, of the person or persons designated to perform the work specified herein. No work shall be performed until this plan has been approved and no deviation from the approved plan will be

permitted without prior approval by the Contracting Officer.

1.6 CARE AND DELIVERY OF SAMPLES

1.6.1 General

The Contractor shall be solely responsible for preserving all samples in good condition. Samples shall be kept from freezing and from undue exposure to the weather, and shall keep all descriptive labels and designations on sample jars, tubes, and boxes clean and legible until final delivery of samples to, and acceptance by, the Contracting Officer. Except as otherwise specified, the Contractor shall deliver samples to the Corps Soil Warehouse, Caven Point Marine Terminal, Foot of Chapel Avenue, Jersey City, New Jersey. Samples shall be delivered within the time limits specified for each type of investigation or in accordance with schedules prepared by the Contracting Officer.

1.6.2 Undisturbed Samples

Every precaution shall be taken to avoid damage to samples as a result of careless handling and undue delay in shipping. Samples shall be shipped in containers approved by the Contracting Officer and shall be of sufficient durability to protect the samples from any damage during shipment. The sample tubes shall be well packed in vermiculite or other equal material approved by the Contracting Officer to protect the samples against vibration. The Contractor shall avoid exposing sealed and crated samples to precipitation, direct sunlight, freezing and temperatures in excess of 100 degrees F. Samples permitted to freeze, even partially, shall be replaced by the Contractor at his expense. In general, no undisturbed samples shall remain on the site of sampling for more than one week before shipment. Samples shall be stored and shipped with the tube in a horizontal position in order to prevent consolidation and segregation or change of water content.

1.7 PROJECT/SITE CONDITIONS

1.7.1 Environmental Requirements

The Contractor shall comply with Section 01355A ENVIRONMENTAL PROTECTION.

1.7.2 Field Measurements

The actual locations will be established in the field by the Contractor prior to the start of work. The elevations of the established locations will also be provided by the Contractor prior to the start of work. The Contractor will provide access to the locations as he deems necessary for the prosecution of the work. Since no separate payment will be made for access construction, all costs associated with this shall be included in the cost of drilling.

1.8 SEQUENCING AND SCHEDULING

1.8.1 Schedule of Drilling and Sampling

The schedule of Drilling, Sampling, and Testing shall be submitted by the Contractor for Contracting Officer approval.

1.8.2 Order of Work

The order in which the work is to be accomplished will be determined in the field by the Contractor; however, the Contracting Officer may vary the order whenever and in whatever manner he deems best for accomplishing the work.

a. The Contractor shall provide a qualified, licensed Geologist experienced in subsurface exploration for each drill unit to oversee all drilling, sampling, and field testing operations. This individual shall be responsible for the preparation of a separate log and/or report for each boring, pressure test, or test pit. This individual shall also be responsible for the preparation of all soil and rock samples for delivery to the designated point.

b. The presence of a Government representative or the keeping of separate drilling records by the Contracting Officer shall not relieve the Contractor of the responsibility for the work specified in this specification.

PART 2 PRODUCTS

2.1 CONTAINERS

The Contractor shall furnish jars, tubes, and boxes that meet the following requirements. All such containers will become the property of the Government and the cost thereof shall be included in the contract price for the applicable item for which payment is provided.

2.1.1 Sample Jars

Sample jars shall be 1 pint capacity, wide-mouth over 2-1/4 inches in diameter plastic jars with moisture-tight screw tops.

2.1.2 Shipping Boxes

Boxes for shipping sample jars shall be corrugated cardboard boxes that have the capacity to hold no more than 12 sample jars and the strength to contain and protect the jars and their contents under ordinary handling and environmental conditions.

2.1.3 Tubes and Crates

Undisturbed samples shall be shipped in thin walled Shelby tubes packed in crates.

2.1.4 Core Boxes

Longitudinally partitioned, hinged top, wooden core boxes constructed of plywood and dressed lumber or other approved materials in general accordance with the arrangement and dimensions shown in FIGURE 1 shall be

used for all rock cores. As many core boxes as may be required shall be used to box all core. Core boxes shall be completely equipped with all necessary partitions, hinges, and a hasp for holding down the cover. In addition, the Contractor shall provide wood spacers made of surfaced lumber (not plywood) and having dimensions that are 1/8 inch less than the inside dimensions of the individual core box troughs and no less than3/4 inch thick for blocking the core in the boxes and for providing a marking space to identify core runs and pull depths/elevations. The quantities of these blocks that are required are: ten blocks per core box for 3-inch. The box should have the following capacities:

3-inch or smaller core	3 or 4 rows of core

The maximum length of a core box for core shall be 5 feet.

2.2 LABELS

2.2.1 Sample Jar Labels

A printed or type-written, fade resistant and waterproof label shall be affixed to the outside of each jar and shall contain the following information:

PROJECT _____ LOCATION _____
(Such as Table Rock Dam) (Such as Borrow Area B)

HOLE NO. _____ STATION _____

JAR NO. _____ of _____ JARS

TOP ELEV. OF HOLE _____ DEPTH OF SAMPLE _____

DESCRIPTION OF MATERIAL _____
(Such as Moist, silty, medium sand)

2.2.2 Shipping Box Labels

Each box of jar samples shall be identified with weatherproof and wear-proof labels indicating the following:

PROJECT: _____

LOCATION: _____

JAR SAMPLES FROM HOLE OR HOLES: _____

2.2.3 Core Box Labels

Core boxes shall be identified with stenciled labels. The information on this label shall contain the following:

PROJECT: _____

HOLE NO. _____

BOX NO. _____

TOTAL NUMBER OF BOXES FOR THE HOLE: _____

PART 3 EXECUTION

3.1 EQUIPMENT AND SUPPLIES

3.1.1 Drive Boring and Sampling

Equipment to be furnished by the Contractor for making drive borings shall include, but not be limited to, standard 2-inch split barrel drive samplers and power-driven drilling machinery of a type or types approved by the Contracting Officer, complete with a drive-hammer of 140-pound weight and all other accessories for taking samples of all types of soils or decomposed rock at the locations and to the depths indicated in the schedule in paragraph SCHEDULE OF DRILLING, SAMPLING, AND TESTING. The drive shoe for the split barrel samplers shall be of hardened steel and shall be replaced or repaired when it becomes dented or distorted. Supplies shall include, but not be limited to, all casing, drill stem, drill bits, drill fluid and additives, pumps, and power necessary to accomplish the required boring and sampling.

3.1.2 Undisturbed Boring and Sampling

Equipment to be furnished by the Contractor for making undisturbed borings shall include, but not be limited to, power-driven drilling machinery of an approved type or types complete with the special devices and accessories enumerated and described hereinafter. Drilling machinery shall be of the hydraulic feed type. Supplies shall include, but not be limited to, all samplers, casing, drill stem, drill bits, drill fluid and additives, pumps, and power necessary to accomplish the required boring and sampling. Drill casing, if used, shall be of such minimum inside diameter as to allow use of the selected sampler.

a. Sands and Cohesive Soils: The sampling device used to sample fine to medium grain sands and cohesive soils shall be a fixed or stationary piston type that uses a 5-inch diameter thin wall Shelby tube. Subject to the approval of the Contracting Officer, floating or free piston and non-piston type samplers may be used provided adequate means, such as check valve or vacuum system, are provided to prevent loss of samples.

3.1.3 Core Drilling - NY Size Cores

Equipment to be furnished by the Contractor for core drilling shall include core-drilling machinery of a type or types approved by the Contracting Officer complete with all the accessories needed to take continuous rock cores of a diameter consistent with bit size to the depths specified. The Contractor shall use, as a minimum, a standard ball-bearing, swivel-head, double-tube core barrel, or equivalent. The capacity of the core barrel shall not exceed 10.5 feet of core. Supplies for core drilling to be furnished by the Contractor shall include, but not be limited to, all casing, drill rods, core barrels, coring bits, piping, pumps, water, tools,

and power required for drilling and all boxes and containers required for core samples. Selection of the type of bit shall be at the Contractor's discretion provided that the selected bit produces high quality rock core.

3.2 IDENTIFYING SAMPLES

Sample jars, shipping boxes, and labels shall comply with PART 2, paragraphs SAMPLE JARS, SHIPPING BOXES, and LABELS, respectively. The Contractor shall take all precautions required to insure that the shipping boxes are not subjected to rough handling or damaging environmental conditions, and complies with paragraph CARE AND DELIVERY OF SAMPLES.

3.3 DRIVE BORING AND SAMPLING

Samples shall be labeled in accordance with paragraph IDENTIFYING SAMPLES. Drive borings drilled through overburden materials shall be suitably cased to permit obtaining drive samples of the size or sizes specified or as directed. Samples shall be taken either continuously or at maximum vertical intervals of 5 feet or at a change in materials or as otherwise directed by the Contracting Officer. The sampler shall be driven with the force of the 140 pound drive hammer under a free fall of 30 inches. To minimize the compacting effect of casing driving when casing is used to stabilize a boring, the bottom of the casing shall be kept as high above the soil sampling zone as conditions permit. If hollow stem auger is used as a casing and/or to advance the boring, a plug assembly must be used to keep soil from entering the inside of the auger. Above the water table, samples shall be obtained from a dry hole. Below the water table, water shall be maintained within the hole at or above the groundwater level. Where information on the natural water content of soils above the water table is not needed and when approved by the Contacting Officer, boreholes may be drilled without casing by using a suitable drilling fluid to prevent collapse of sidewalls. When a drilling fluid is used, soil sampling shall be done by such means that will prevent inclusion of drilling fluid in the samples. The samples shall be placed in sample jars as soon as possible after they are taken from the hole and, when possible, the volume of the sample shall be large enough to completely fill the sample jar in order that the natural moisture content of the material may be retained to the fullest extent possible. All samples shall be labeled. No sample shall remain at the site of boring for more than one week after being taken from the hole.

3.4 UNDISTURBED BORING AND SAMPLING

In general, labeling of undisturbed samples shall conform to paragraph IDENTIFYING SAMPLES. Particular care shall be taken to indicate the top and bottom of each sample tube. Tubes and crates for undisturbed samples shall be labeled "DO NOT JAR OR VIBRATE" and "HANDLE, HAUL, AND SHIP IN A HORIZONTAL POSITION".

3.4.1 Procedure

The procedure for Undisturbed Sample shall be the same as outlined in paragraph DRIVE BORING AND SAMPLING, except that the sampling device shall be advanced downward by one continuous, smooth drive using the drill rig's

hydraulic feed system. The hydraulic down pressure shall be read and recorded at 6 inch intervals during each sample drive. Driving of any undisturbed sampling device by means such as a drop hammer will not be permitted. Upon approval from the Contracting Officer, undisturbed samples may be obtained from piston type samplers.

3.4.2 Sealing

3.4.2.1 Alternate 1

The soil sample obtained in a thin wall Shelby tube shall be retained in the tube and sealed on both ends with a mechanically expandable O-ring sealing disk of the appropriate size.

3.4.2.2 Alternate 2

The soil sample obtained in a thin wall Shelby tube shall be extruded from the tube in the field as soon as the tube is removed from the boring by a method approved by the Contracting Officer. The extruded soil sample shall immediately be wrapped in aluminum foil and placed in the center of a metal bottomed, waxed cardboard tube that has a diameter of at least 1 inch larger than the diameter of the soil sample, is at least 1-inch longer than the length of the soil sample, and has at least 1/2-inch of congealed 50/50 mixture of paraffin and microcrystalline wax in the bottom. The annular space between the soil sample and the tube shall be filled with a 50/50 mixture of paraffin and microcrystalline wax to a distance of at least 1/2-inch above the top of the soil sample.

3.5 CORE DRILLING - NY SIZE CORE

3.5.1 Procedure

All holes shall be drilled vertically to the bottom elevations or depths specified in the schedule of borings or directed to be drilled otherwise. Off-setting of borings from the locations specified in the Plan of Borings or as shown on the drawings, will not be permitted without prior approval. Casing through the overburden may be required. This casing shall be sealed in the rock at the elevation where rock is encountered prior to commencement of rock coring. The Contractor shall operate his drills at such speeds and with such down pressures and shall control drill fluid pressures and quantities to insure maximum core quality and recovery in whatever kind of rock is encountered. Where soft or broken rock is encountered, the Contractor shall reduce the length of runs to 5 feet or less in order to reduce and/or keep core loss and core disturbance to the minimum. Failure to comply with the foregoing procedures shall constitute justification for the Contracting Officer to require redrilling, at the Contractor's expense, of any boring from which the core recovery is unsatisfactory. The Contractor shall exercise particular care in recording zones of water loss, cavities, rod jerks, rough drilling and other unusual and non-ordinary coring experiences that, supplementing the core record, will throw light on the nature and the extent of any fracturing or abnormalities. The Contractor shall core two five foot runs in each boring to make an accurate determination of the bedrock.

3.5.2 Arrangement of Core

Core boxes shall comply with PART 2, paragraph CORE BOXES. All cores shall be arranged neatly in the partitioned boxes in the same sequence in which they occurred before removal from the hole. Facing the open box with the hinged cover above and the open box below, cores shall be arranged in descending sequence beginning at the left end of the trough nearest the hinges and continuing in the other troughs from left to right. The highest part of the core shall be placed in box 1, and the lower portions of the core shall be placed in the other boxes in consecutive order.

3.5.3 Labeling, Marking and Packing Core

Stenciled labels for core boxes complying with paragraph CORE BOX LABELS shall be placed on the inside and outside of the top cover in addition to each end. In addition, the depths (or elevations) of each core run/pull shall be marked with a black waterproof pen on the spacer blocks that are placed between core pulls. When a box is full, the space between the core and the trough sides shall be filled with finely ground vermiculite or other packing material approved by the Contracting Officer.

3.5.4 Disposition of Core

While on site, the Contractor shall protect the filled core boxes from direct sunlight, precipitation, and freezing by some form of Contracting Officer approved shelter that allows ventilation to the boxes. Upon completion of core drilling and sampling operations, core boxes containing cores shall be stored in an area provided by the Contracting Officer near the site of drilling.

3.5.5 Rock Composition Strengths

The Contractor shall determine the compression strength of the rock by performing the point load test in accordance with RTH 325 and determine the strength index using RTH 111. The Contractor shall select core pieces from each boring, suitable for the point load test.

3.6 RECORDS

The Contractor shall keep accurate driller's logs (DRILLING LOG, ENG FORM 1836, and 1836-A will be provided by the Contacting Officer) and records of all work accomplished under this contract and shall deliver complete, legible copies of these logs and records to the Contracting Officer within 7 days after a hole is completed. All such records shall be recorded during the actual performance of the work and shall be preserved in good condition and order by the Contractor until they are delivered and accepted. The Contracting Officer shall have the right to examine and review all such records at any time prior to their delivery to him and shall have the right to request changes to the record keeping procedure. The following information shall be included on the logs or in the records for each hole:

a. Hole number or designation and elevation of top of hole.

b. Driller's name and Geologist's name.

c. Make, size, and manufacturer's model designation of drilling and sampling equipment.

d. Type of drilling and sampling operation by depth.

e. Hole diameter.

f. Dates and time by depths when drilling and sampling operations were performed.

g. Time required for drilling each run.

h. Drill action, rotation speed, hydraulic pressure, water pressure, tool drops, and any other unusual and non-ordinary experience which could indicate the subsurface conditions encountered.

i. Depths at which samples or cores were recovered or attempts made to sample or core including top and bottom depth of each run.

j. Classification or description by depths of the materials sampled,][cored, or penetrated using the Unified Soil Classification System (ASTM D 2487) and including a description of moisture conditions, consistency and other appropriate descriptive information described in paragraph SUPPLEMENTAL BORINGS of ASTM D 2488. This classification or description shall be made immediately after the samples or cores are retrieved.

k. Classification and description by depths of rock materials sampled or cored including rock type, composition, texture, presence and orientation of bedding, floiation, or fractures, presence of vugs or other interstices, and the RQD for each cored interval. the top of bedrock shall also be indicated in the log.

l. Indication of penetration resistance such as drive-hammer blows given in blows per foot for driving sample spoons and casing.

m. Weight of drive hammer.

n. Percentage of sample or core recovered per run.

o. Depth at which groundwater is encountered initially and when stabilized.

p. Depths at which drill water is lost and regained and amounts.

q. Depths at which the color of the drill water return changes.

r. Type and weight of drill fluid.

s. Depth of bottom of hole.

-- End of Section --

SECTION 02230

CLEARING AND GRUBBING, DEMOLITION AND OFFSITE DISPOSAL
06/97

PAYMENT ITEM NO. 0002 CLEARING AND GRUBBING

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Clearing

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including down timber, snags, brush, and rubbish occurring in the areas to be cleared.

1.1.2 Grubbing

Grubbing shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the designated grubbing areas.

1.1.3 Demolition and Offsite Disposal

Demolition and offsite disposal shall consist of the removal of all existing timber piling within the project area.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Materials Other Than Salable Timber; FIO

Written permission to dispose of such products on private property shall be filed with the Contracting Officer.

1.3 MEASUREMENT

1.3.1 Measured Clearing

Clearing shall be measured in acres of clearing actually performed. Areas of light brush, shrubs, and other vegetation that can be cut with a brush hook, scythe, or mowing machine shall not be measured as clearing.

1.3.2 Measured Grubbing

Grubbing shall be measured in acres of grubbing actually performed. Areas where tree roots and timber are less than 3 inches in diameter and areas where roots of brush, shrubs, and other vegetation can be removed by plowing shall not be measured as grubbing.

1.3.3 Measured Clearing and Grubbing

Clearing and grubbing shall be measured in acres of clearing and grubbing actually performed.

1.3.4 Measured Tree Removal

Tree removal shall be measured by the number of trees of stated sizes removed from areas outside the clearing and grubbing areas. The size shall be determined by the average diameter of the trunk 4 feet above the ground line. The size of stumps designated for removal as trees shall be determined by the diameter of the trunk 4 feet above the ground line. The diameter shall be measured to the nearest full inch.

1.4 PAYMENT

1.4.1 Paid Clearing

Payment for clearing will be made at the contract unit price per acre for clearing, and this price shall constitute full compensation for all labor, equipment, tools, and incidentals necessary to complete the work specified herein.

1.4.2 Paid Grubbing

Payment for grubbing will be made at the contract unit price per acre for grubbing, and this price shall constitute full compensation for all labor, equipment, tools, and incidentals necessary to complete the work specified herein.

1.4.3 Paid Clearing and Grubbing

Payment will be made at the contract unit price for clearing and grubbing, and this price shall constitute full compensation for all labor, equipment, tools, and incidentals necessary to complete the work specified herein.

1.4.4 Paid Tree Removal

Payment for tree removal will be made at the contract unit price for removing trees, or stumps designated as trees, that are outside the area designated for clearing or grubbing in accordance with the following schedule of sizes:

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 CLEARING

Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1-1/2 inches or more in diameter and shall be trimmed of all branches the heights indicated or directed. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Cuts more than 1-1/2 inches in diameter shall be painted with an approved tree-wound paint. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Clearing shall also include the removal and disposal of timber and debris that obtrude, encroach upon the work.

3.2 GRUBBING

Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be grubbed and in areas indicated as construction areas under this contract, such as areas for buildings, and areas to be paved. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

3.3 TREE REMOVAL

Where indicated or directed, trees and stumps that are designated as trees shall be removed from areas outside those areas designated for clearing and grubbing. This work shall include the felling of such trees and the removal of their stumps and roots as specified in paragraph GRUBBING. Trees shall be disposed of as specified in paragraph DISPOSAL OF MATERIALS.

3.4 DEMOLITION OF TIMBER PILES

All timber piles to be removed shall be fully extracted to avoid interference with the sheet piles and caisson installation.

3.5 DISPOSAL OF MATERIALS

3.5.1 Materials Other Than Salable Timber

Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations, except for salable timber, shall be disposed of off-site at a NYSDEC approved landfill except when otherwise directed in writing. Such directive will state the conditions covering the disposal of such products and will also state the areas in which they may be placed.

-- End of Section --

SECTION 02300A

EARTHWORK
12/97

PAYMENT ITEM NO. 0009 EXCAVATION UNCLASSIFIED

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO T 180	(1997) Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and an 457 mm (18-in) Drop
AASHTO T 224	(1996) Correction for Coarse Particles in the Soil Compaction Test

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 136	(1996a) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 1140	(1997) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve
ASTM D 1556	(1990; R 1996el) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991; R 1998) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu. m.))
ASTM D 2167	(1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2487	(1998) Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 2922	(1996el) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 2937	(1994) Density of Soil in Place by the Drive-Cylinder Method
ASTM D 3017	(1988; R 1996el) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	(1998) Liquid Limit, Plastic Limit, and Plasticity Index of Soils

1.2 MEASUREMENT

1.2.1 Excavation

The unit of measurement for excavation will be the cubic yard, computed by the average end area method from cross sections taken before and after the excavation operations. The volume to be paid for will be the number of cubic yards of material measured (excluding riprap) in its original position and removed from the excavation areas, including the excavation for ditches, gutters, and channel changes, when the material is acceptably utilized or disposed of as herein specified. The measurements will include authorized excavation of buried rock, excavation of satisfactory and unsatisfactory subgrade soil. The measurement will not include the volume of subgrade material or other material that is scarified or plowed and reused in-place, and will not include the volume excavated without authorization or the volume of any material used for purposes other than directed. The measurement will not include the volume of any excavation performed prior to the taking of elevations and measurements of the undisturbed grade.

1.3 PAYMENT

Payment will constitute full compensation for all labor, equipment, tools, supplies, and incidentals necessary to complete the work.

1.3.1 Unclassified Excavation

Unclassified excavation will be paid for at the contract unit price per cubic yard for unclassified excavation.

1.4 DEFINITIONS

1.4.1 Satisfactory Materials

Satisfactory materials shall comprise any materials classified by ASTM D 2487 as GW, GP, GM, GP-GM, GW-GM, GC, GP-GC, GM-GC, SW, SP, SM, SW-SM, SP-SM. Satisfactory materials for grading shall be comprised of stones less than 8 inches, except for fill material for pavements and railroads which shall be comprised of stones less than 3 inches in any dimension.

1.4.2 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials are unsatisfactory. Unsatisfactory materials also include man-made fills; trash; refuse; backfills from previous construction; and material classified as satisfactory which contains root and other organic matter or frozen material. The Contracting Officer shall be notified of any contaminated materials.

1.4.3 Cohesionless and Cohesive Materials

Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic. Testing required for classifying materials shall be in accordance with ASTM D 4318, ASTM C 136, ASTM D 422, and ASTM D 1140.

1.4.4 Degree of Compaction

Degree of compaction is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557 abbreviated as a percent of laboratory maximum density.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Earthwork; G, A.

Procedure and location for disposal of unused satisfactory material.

Notification of encountering rock in the project. Advance notice on the opening of excavation or borrow areas. Advance notice on shoulder construction for rigid pavements.

SD-06 Test Reports

Testing; G, A.

Within 24 hours of conclusion of physical tests, 8 copies of test results, including calibration curves and results of calibration tests.

SD-07 Certificates

Testing; FIO.

Qualifications of the commercial testing laboratory or Contractor's testing

facilities.

1.6 SUBSURFACE DATA

Subsurface soil boring logs are shown in Section 00900 Subsurface Investigation or on the contract drawings. These data represent the best subsurface information available; however, variations may exist in the subsurface between boring locations.

1.7 CLASSIFICATION OF EXCAVATION

No consideration will be given to the nature of the materials, and all excavation will be designated as unclassified excavation.

1.8 UTILIZATION OF EXCAVATED MATERIALS

Unsatisfactory materials removed from excavations shall be disposed of off-site. Satisfactory material removed from excavations shall be used, insofar as practicable, in the construction of fills, embankments, subgrades, shoulders, bedding (as backfill), and for similar purposes as authorized by the Contracting Officer. No excavated material shall be disposed of to obstruct the flow of any stream, endanger a partly finished structure, impair the efficiency or appearance of any structure, or be detrimental to the completed work in any way.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL EXCAVATION

The Contractor shall perform excavation of every type of material encountered within the limits of the project, except surface riprap, to the lines, grades, and elevations indicated and as specified or as authorized by the Contracting Officer. Grading shall be in conformity with the typical sections shown and the tolerances specified in paragraph FINISHING. Satisfactory excavated materials shall be transported to and placed in fill or embankment within the limits of the work. Unsatisfactory materials encountered within the limits of the work shall be excavated below grade and replaced with satisfactory materials as directed. Such excavated material and the satisfactory material ordered as replacement shall be included in excavation. Surplus satisfactory excavated material not required for fill or embankment shall be disposed of in areas approved for surplus material storage or designated waste areas. Unsatisfactory excavated material shall be disposed of in designated waste or spoil areas. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times.

3.2 OPENING AND DRAINAGE OF EXCAVATION

The Contractor shall notify the Contracting Officer sufficiently in advance of the opening of any excavation to permit elevations and measurements of the undisturbed ground surface to be taken. Except as otherwise permitted, excavation areas shall be excavated providing adequate drainage.

Overburden and other spoil material shall be transported to designated spoil areas or otherwise disposed of as directed. The Contractor shall ensure that excavation of any area, or dumping of spoil material results in minimum detrimental effects on natural environmental conditions.

3.3 GRADING AREAS

Where indicated, work will be divided into grading areas within which satisfactory excavated material shall be placed in embankments, fills, and required backfills. The Contractor shall not haul satisfactory material excavated in one grading area to another grading area except when so directed in writing.

3.4 EARTHWORK

3.4.1 Grading

Grading shall consist of the sloping of bluff banks damaged by bank failures and the preparation of the subgrade for placement of new riprap; reshaping of the overbank areas; and any incidental work as may be required in the prosecution of the work. Most of the grading will be in areas where mechanical equipment can be used, but some hand grading will be required. The Contractor shall remove and dispose of any existing unsuitable material (i.e., broken pavement, debris) that may have been placed on the bank during previous stabilization efforts. All grading and filling shall be done to the lines and grades as staked in the field or as specified or as shown on the contract drawings. Material used in making fills or restoring the subgrade shall be suitable granular material that is free from roots, brush or other debris; and shall be placed in layers not to exceed 8-inches in thickness. Each layer shall be thoroughly compacted to a density at least equal to that of the adjacent undisturbed earth. Excess material shall be spread on the sloped adjacent to the area of repair or removed from the site.

3.4.2 Excavation

Excavation shall be required in some failures where protrusions of stone above adjacent surface is objectionable. Where excavation is specified, the subgrades shall be excavated 10 to 12 inches below the surface of the adjacent paving. Large areas may not require excavating throughout, but excavation to the depths specified above will be required only for a distance of 5 feet inside the perimeter of the failure. Most of the excavation can be accomplished by mechanical means, but some hand work around the edges will be required. All work shall be to the lines and grades as staked in the field or as specified. Excess material resulting from the operation shall be removed from the site.

3.5 BACKFILL

Backfill, using excavated satisfactory material disposed at the site, adjacent to any and all types of structures shall be placed and compacted to at least 90 percent laboratory maximum density for cohesive materials or 95 percent laboratory maximum density for cohesionless materials to prevent wedging action or eccentric loading upon or against the structure. Ground

surface on which backfill is to be placed shall be prepared as specified in paragraph PREPARATION OF GROUND SURFACE FOR EMBANKMENTS. Compaction requirements for backfill materials shall also conform to the applicable portions of paragraphs PREPARATION OF GROUND SURFACE FOR EMBANKMENTS, EMBANKMENTS, and SUBGRADE PREPARATION. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment.

3.6 PREPARATION OF GROUND SURFACE FOR EMBANKMENTS

3.6.1 General Requirements

Ground surface on which fill is to be placed shall be stripped of live, dead, or decayed vegetation, rubbish, debris, and other unsatisfactory material; plowed, disked, or otherwise broken up to a depth of 6 inches; pulverized; moistened or aerated as necessary; thoroughly mixed; and compacted to at least 90 percent laboratory maximum density for cohesive materials or 95 percent laboratory maximum density for cohesionless materials. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. The prepared ground surface shall be scarified and moistened or aerated as required just prior to placement of embankment materials to assure adequate bond between embankment material and the prepared ground surface.

3.6.2 Frozen Material

Embankment shall not be placed on a foundation which contains frozen material, or which has been subjected to freeze-thaw action. This prohibition encompasses all foundation types, including the natural ground, all prepared subgrades (whether in an excavation or on an embankment) and all layers of previously placed and compacted earth fill which become the foundations for successive layers of earth fill. All material that freezes or has been subjected to freeze-thaw action during the construction work, or during periods of temporary shutdowns, such as, but not limited to, nights, holidays, weekends, winter shutdowns, or earthwork operations, shall be removed to a depth that is acceptable to the Contracting Officer and replaced with new material. Alternatively, the material will be thawed, dried, reworked, and recompacted to the specified criteria before additional material is placed. The Contracting Officer will determine when placement of fill shall cease due to cold weather. The Contracting Officer may elect to use average daily air temperatures, and/or physical observation of the soils for his determination. Embankment material shall not contain frozen clumps of soil, snow, or ice.

3.7 EMBANKMENTS

3.7.1 Earth Embankments

Earth embankments shall be constructed from excavated satisfactory materials free of organic or frozen material and rocks with any dimension greater than 3 inches. The material shall be placed in successive horizontal layers of loose material not more than 6 inches in depth. Each layer shall be spread uniformly on a soil surface that has been moistened

or aerated as necessary, and scarified or otherwise broken up so that the fill will bond with the surface on which it is placed. After spreading, each layer shall be plowed, disked, or otherwise broken up; moistened or aerated as necessary; thoroughly mixed; and compacted to at least 90 percent laboratory maximum density for cohesive materials or 95 percent laboratory maximum density for cohesionless materials. Compaction requirements for the upper portion of earth embankments forming subgrade for pavements shall be identical with those requirements specified in paragraph SUBGRADE PREPARATION. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment.

3.8 SUBGRADE PREPARATION

3.8.1 Construction

Subgrade shall be shaped to line, grade, and cross section, and compacted as specified. This operation shall include plowing, disking, and any moistening or aerating required to obtain specified compaction. Soft or otherwise unsatisfactory material shall be removed and replaced with satisfactory excavated material or other approved material as directed. Buried or partially buried rock excavated will be fully backfilled with compaction. Low areas resulting from removal of unsatisfactory material or excavation of rock shall be brought up to required grade with satisfactory materials, and the entire subgrade shall be shaped to line, grade, and cross section and compacted as specified.

3.8.2 Compaction

Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. Except for paved areas and railroads, each layer of the embankment shall be compacted to at least 95 percent of laboratory maximum density.

3.9 FINISHING

The surface of excavations, embankments, and subgrades shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. The degree of finish for graded areas shall be within 0.1 foot of the grades and elevations indicated except that the degree of finish for subgrades shall be specified in paragraph SUBGRADE PREPARATION.

3.10 TESTING

Testing shall be performed by an approved commercial testing laboratory or by the Contractor subject to approval. If the Contractor elects to establish testing facilities, no work requiring testing will be permitted until the Contractor's facilities have been inspected and approved by the Contracting Officer. Field in-place density shall be determined in accordance with ASTM D 1556. When test results indicate, as determined by

the Contracting Officer, that compaction is not as specified, the material shall be removed, replaced and recompacted to meet specification requirements. Tests on recompacted areas shall be performed to determine conformance with specification requirements. Inspections and test results shall be certified by a registered professional civil engineer. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests. The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type operation.

3.10.1 Fill and Backfill Material Gradation

One test per 200 cubic yards stockpiled or in-place source material. Gradation of fill and backfill material shall be determined in accordance with ASTM C 136.

3.10.2 In-Place Densities

a. One test per 100 square feet, or fraction thereof, of each lift of fill or backfill areas compacted by other than hand-operated machines.

b. One test per 500 square feet, or fraction thereof, of each lift of fill or backfill areas compacted by hand-operated machines.

3.10.3 Check Tests on In-Place Densities

If ASTM D 2922 is used, in-place densities shall be checked by ASTM D 1556 as follows:

a. One check test per lift for each 2000 square feet, or fraction thereof, of each lift of fill or backfill compacted by other than hand-operated machines.

b. One check test per lift for each 2000 square feet, of fill or backfill areas compacted by hand-operated machines.

3.10.4 Moisture Contents

In the stockpile, excavation, a minimum of two tests per day per type of material or source of material being placed during stable weather conditions shall be performed. During unstable weather, tests shall be made as dictated by local conditions and approved by the Contracting Officer.

3.10.5 Optimum Moisture and Laboratory Maximum Density

Tests shall be made for each type material excavated to determine the optimum moisture and laboratory maximum density values. One representative test per 250 cubic yards of fill and backfill, or when any change in material occurs which may affect the optimum moisture content or laboratory maximum density.

3.10.6 Tolerance Tests for Subgrades

Continuous checks on the degree of finish specified in paragraph SUBGRADE PREPARATION shall be made during construction of the subgrades.

3.11 SUBGRADE AND EMBANKMENT PROTECTION

During construction, embankments and excavations shall be kept shaped and drained. Ditches and drains along subgrade shall be maintained to drain effectively at all times. The finished subgrade shall not be disturbed by traffic or other operation and shall be protected and maintained by the Contractor in a satisfactory condition until ballast, subbase, base, or pavement is placed. The storage or stockpiling of materials on the finished subgrade will not be permitted. No subbase, base course, ballast, or pavement shall be laid until the subgrade has been checked and approved, and in no case shall subbase, base, surfacing, pavement, or ballast be placed on a muddy, spongy, or frozen subgrade.

-- End of Section --

SECTION 02371A

WIRE MESH GABIONS
10/01

PAYMENT ITEM NO. 0003 WIRE MESH GABIONS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 90/A 90M	(1995a) Weight (Mass) of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
ASTM A 313/A 313M	(1998) Stainless Steel Spring Wire
ASTM A 370	(1997a) Mechanical Testing of Steel Products
ASTM A 428/A 428M	(1995) Weight (Mass) of Coating on Aluminum-Coated Iron or Steel Articles
ASTM A 641/A 641M	(1998) Zinc-Coated (Galvanized) Carbon Steel Wire
ASTM A 764	(1995) Metallic Coated Carbon Steel Wire, Coated at Size and Drawn to Size for Mechanical Springs
ASTM A 809	(1998) Aluminum-Coated (Aluminized) Carbon Steel Wire
ASTM A 853	(1993; R 1998)Steel Wire, Carbon, for General Use
ASTM A 856/A 856M	(1998) Zinc-5% Aluminum-Mischmetal Alloy-Coated Carbon Steel Wire
ASTM A 974	(1997) Welded Wire Fabric Gabions and Gabion Mattresses (Metallic Coated or Polyvinyl Chloride (PVC) Coated)
ASTM A 975	(1997) Double-Twisted Hexagonal Mesh Gabions and Revet Mattresses

	(Metallic-Coated Steel Wire or Metallic-Coated Steel Wire With Poly(Vinyl Chloride) (PVC) Coating)
ASTM B 117	(1997) Operating Salt Spray (Fog) Apparatus
ASTM C 33	(1999ael) Concrete Aggregates
ASTM C 136	(1996a) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 412	(1998a) Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastometers - Tension
ASTM D 638	(1999) Tensile Properties of Plastics
ASTM D 746	(1998) Brittleness Temperature of Plastics and Elastometers by Impact
ASTM D 792	(1998) Density and Specific Gravity (Relative Density) of Plastics by Displacement
ASTM D 1242	(1995a) Resistance of Plastic Materials to Abrasion
ASTM D 1499	(1999) Operating Light- and Water-Exposure Apparatus (Carbon-Arc Type) for Exposure of Plastics
ASTM D 2240	(2000) Rubber Property-Durometer Hardness
ASTM D 5312	(1992; R 1997) Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions
ASTM G 23	(1996) Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 144	(1992) Standard Test Method for Resistance of Rock to Freezing and Thawing

1.2 UNIT PRICES

1.2.1 Gabion Protection

1.2.1.1 Payment

Payment will be made for costs associated with gabion, including the costs

of furnishing, assembling, and placing the wire baskets, the stone fill, and all other materials, labor, equipment, tools, supplies, and incidental costs in connection with completing this item of work.

1.2.1.2 Measurement

Gabions meeting the requirements of these specifications and acceptably placed within the limits indicated on the drawings or otherwise established in the field, will be measured for payment by the cubic yard of stone filled gabions in place.

1.2.1.3 Unit of Measure

Unit of measure shall be cubic yard.

1.3 GENERAL REQUIREMENTS

The work under this specification includes furnishing, assembling, filling and tying open wire mesh rectangular compartmented gabions placed on a prepared surface of geotextile, as specified, and in accordance with the lines, grades, and dimensions shown or otherwise established in the field.

1.4 SUBMITTALS

Government approval is required for submittal with "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Samples

Gabions; G, A
Alternative Wire Fasteners; G, A

Samples of the materials, used to fabricate the gabions or mattresses, shall be furnished to the Contracting Officer 60 days prior to assembly of units onsite so that testing may be performed by the Government in accordance with either ASTM A 974 or ASTM A 975 depending on which system is being furnished by the Contractor.

SD-06 Test Reports

Gabions; G, A
Alternative Wire Fasteners; G, A

For each shipment of wire gabions or mattresses delivered to the site, the Contractor shall furnish the Contracting Officer, in duplicate, test reports or records that have been performed during the last year on all material contained within the shipment meets the composition, physical, and manufacturing requirements stated in this specification.

SD-07 Certificates

Stone Fill; G, A

A certificate or affidavit signed by a legally authorized official of the supplier of the stone fill and the supplier of the natural filter material that it meets the quality required and gradation limits specified.

1.5 DESCRIPTION

Gabions are wire mesh containers of variable sizes, uniformly partitioned into internal cells, interconnected with other similar units, and filled with stone at the project site to form flexible, permeable, monolithic structures. Gabions shall be manufactured with all components mechanically connected at the production facility with the exception of the mattress lid, which is produced separately from the base. The supply to the jobsite of unassembled individual wire mesh components (panels) forming gabions will not be permitted. Definitions of terms specific to this specification and to all materials furnished on the jobsite, with the exception of the rock to fill the baskets, shall refer and be in compliance with ASTM A 974 for welded wire fabric Gabions.

1.6 DEFINITIONS

1.6.1 Welded Wire Fabric Gabions

They are classified according to wire coating styles as follows:

Style 1, consists of welded wire fabric made from wire which is zinc coated before being welded into fabric. Spiral binders, lacing wire, and stiffeners are produced from zinc-coated wire;

Style 2, consists of welded wire fabric which is made from uncoated wire and the fabric is subsequently zinc-coated after fabrication. Spiral binders, lacing wire, and stiffeners are produced from zinc-coated wire;

Style 3, consists of welded wire fabric made from wire which is coated with zinc-5% aluminum-mischmetal alloy (Zn-5Al-MM) before being welded into fabric. Spiral binders, lacing wire, and stiffeners are also produced from zinc-5% aluminum-mischmetal alloy (Zn-5Al-MM) coated wire;

Style 4, consists of welded wire fabric made from wire which is aluminum-coated before being welded into fabric. Spiral binders, lacing wire, and stiffeners are also produced from aluminum-coated (aluminized) wire;

Style 5, consists of welded wire fabric, spiral binders, lacing wire, and stiffeners as Styles 1, 2, 3, or 4, and overcoated with PVC.

1.7 Government Testing and Studies

1.7.1 Samples

Samples of materials used to fabricate the Gabions shall be furnished to the Contracting Officer 60 days prior to start of installation. Samples will be tested in accordance with specification and either ASTM A 974 or ASTM A 975 depending on which system is being furnished by the Contractor. The Government reserves the right to test additional samples to verify the submitted test records at the Government's expense. When the first test results indicate that the fasteners do not meet the specified requirements, the additional test will be at the Contractor's expense. The fasteners will be rejected after two tests failing to meet the requirements.

1.7.2 Test Report or Documents

Copies of all test results shall be furnished to the Technical Representative of this specification, USACE District, Vicksburg, 4155 Clay St., Vicksburg, MS 39183-3435, Attn: Dale Goss (ED-GI).

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Welded Wire Fabric Gabions

Welded wire fabric Gabions shall be Style 3 manufactured with a welded wire mesh composed of a series of longitudinal and transverse steel wires arranged substantially at right angles to each other, and welded together at the points of intersection by electrical resistance welding to form fabricated sheets. Gabion sizes, wire diameters, mesh opening sizes, physical properties of the PVC for coating, and tolerances shall comply with the requirements of ASTM A 974 (Tables 1, 2, 3, and Sections 9). Gabions [and Matresses] shall meet the following test requirements:

Metallic coating - The coating weights shall conform to the requirements of ASTM A 90/A 90M.

Wire Tensile strength - The tensile strength of the wire used for the welded wire fabric, spiral binders, lacing wire and stiffeners shall be soft medium in accordance with ASTM A 856/A 856M (Style 3). The cross-sectional area of the test specimen shall be based on the diameter of the metallic coated wire. All the wires used in the fabrication of gabions must use the same temper wire per given order.

Weld Shear Strength - The minimum average shear value in pounds-force shall be 70% of the breaking strength of the wire or as indicated in the table as follows, whichever is greater, when tested in accordance with ASTM A 974 Section 13.4. Typical minimum average shear strengths as specified are as follows:

TABLE 2

Minimum average shear strength values for the welded mesh

Wire Diameter inch	Min. Av. Shear Strength lbs	Min. Shear Strength lbs
0.087	292	225
0.106	472	360
0.120	584	450

The material shall be deemed to conform with the requirements for weld shear strength if the average of the test results of the first four specimens or if the average of the test results for all welds tested comply with TABLE 2.

Panel to Panel Joint Strength - The minimum strength of the joined panels, when tested as described in ASTM A 974 Section 13.5, shall be as follows:

TABLE 3

Panel to panel joint strength for welded gabions

Test Description	Gabions, Metallic coated lb/ft	Gabions, PVC coated lb/ft	(Revet mattresses metallic and PVC coated) lb/ft
Connection to selvedges	1400	1200	700
Panel to panel (using lacing wire or ring fasteners	1400	1200	700

The strength values reported in lb/ft are referred to the unitary width of the specimen. The panel to panel test shall demonstrate the ability of the fastening system to achieve the required strength, and indicate the number of wire revolutions for the lacing wire used. The same number of wire revolutions shall be used in the field installation.

2.1.2 Alternative Wire Fasteners for Gabions

Subject to approval of the Contracting Officer, alternative fastening systems may be used in lieu of lacing wire. Alternative fasteners to lacing wire recommended for woven wire gabions, according to ASTM A 975, are steel ring fasteners for metallic coated gabions, or stainless steel rings for PVC coated gabions. Ring fasteners for woven wire gabions shall comply with the minimum requirements indicated in paragraph Ring Fasteners below, and they shall develop a minimum panel to panel joint strength as indicated in TABLE 1. Alternative fasteners to lacing wire for welded wire gabions, according to ASTM A 974, are spiral binders. Spiral binders for welded wire gabions shall comply with the minimum requirements indicated in paragraph Spiral Binders below. Ring fasteners may alternatively be used for welded wire gabions, provided that they comply with the minimum

specified requirements (salt spray and pull-apart resistance). Connections panel to panel for welded gabions with ring fasteners shall develop a minimum joint strength as indicated in TABLE 3. The Contractor shall provide a complete description of the fastener system and a description of a properly installed fastener, including drawings or photographs if necessary. The Contractor shall provide test results that demonstrate that the alternative-fastening system meets the requirements of the specifications, according to the following criteria:

a. That the proposed fastener system can consistently produce a panel to panel joint strength as indicated TABLE 3 for welded wire mesh gabions;

b. That the proposed fastener system does not cause damage to the protective coating on the wire;

c. That the Contractor has the proper equipment and trained employees to correctly install the fasteners;

d. That proper installation can be readily verified by visual inspection.

Samples of wire fasteners with their certified test records shall be submitted at least 60 days in advance to the Contracting Officer for approval. The Government reserves the right to test additional samples to verify the submitted test records at the Government's expense. When the first test results indicate that the fasteners do not meet the specified requirements, the additional test will be at the Contractor's expense. The fasteners will be rejected after two tests failing to meet the requirements.

2.1.2.1 Ring Fasteners

The tensile strength of the zinc-coated steel wire, zinc-5% aluminum coated mischmetal alloy-coated steel wire and aluminum-coated steel wire used for fasteners shall be in accordance with the requirements of ASTM A 764, Type A, B, or C, Table 2 or Table 3. The tensile strength of stainless steel wire used for fasteners shall be in accordance with the requirements of ASTM A 313/A 313M, Type 302, Table 2. Any fastener system shall give the number of fasteners required to comply with TABLE 3, in accordance with ASTM A 974 (Section 7.3), for welded wire gabions. Ring fasteners shall not be installed more than 4 inches apart. Each fastener type shall be closed and the free ends of the fastener shall overlap a minimum of 1 inch. The manufacturer or supplier shall state the number of fasteners required for all vertical and horizontal connections for single and multiple basket joining. Approved ring fasteners including fasteners made of stainless steel shall be subject to the salt spray test and pull-apart resistance test and shall be documented by actual testing of panel to panel connections within the last year by validated laboratories.

a. Salt Spray Test - A set of two identical rectangular gabion panels, each with a width about 10-1/2 mesh openings along a selvedge wire, shall be joined by properly installed wire fasteners along the two selvedge wires so that each fastener confines two selvedge and two mesh wires. If the fasteners are also to be used to joint two individual empty gabion baskets,

two additional selvedge wires which are each mechanically wrapped with mesh wires shall be included so that each fastener confines four selvedge and four mesh wires. The set of the jointed panels shall be subject to salt spray test, ASTM B 117, for a period of not less than 48 hours. At the end of the test, the fasteners, the selvedge, or mesh wires confined by the fasteners shall show no rusty spots on any part of the surface excluding the cut ends. A properly installed fastener shall meet the following requirements:

1). Each interlocking fastener shall be in a locked and closed position.

2). Each ring fastener shall be closed, and the free ends of the fastener shall overlap a minimum of 1 inch.

b. Pull-Apart Resistance Test - A new set of the jointed panels, which are prepared by the same method as specified in the salt spray test but without being subject to the 48-hour salt spray test, shall be mounted on a loading machine with grips or clamps such that the panels are uniformly secured along the full width. The grips or clamps shall be designed to transmit only tension forces. The load will then be applied at a uniform rate of 50 lbs/sec until failure occurs. The failure is defined as when the maximum load is reached and a drop of strength is observed with subsequent loading or the opening between any two closest selvedge wires, applicable to a fastener confining either two or four selvedge wires, becomes greater than 2 inches at any place along the panel width. The strength of the jointed panels at failure shall have a minimum as indicated in TABLE 3.

2.1.2.2 Spiral Binders

Spiral binders are defined as a length of metallic coated steel wire or metallic coated steel wire with PVC coating preformed into a spiral, used to assemble and interconnect empty gabion units, and to close and secure stone-filled units. Spiral binders shall be fabricated with the same wire and coating style as the wire mesh. Test requirements for spiral binders shall refer to TABLE 3 regarding Metallic Coating, PVC for coating, Tensile Strength, and Panel to Panel Joint Strength.

2.1.3 Testing

Test records made within one year by certified laboratories and Government agencies will be used to determine the acceptability of the fastening system. Samples of wire fasteners and samples of material for fabricating the gabions with their certified test records shall be submitted at least 60 days in advance to the Contracting Officer for approval. The Government reserves the right to test additional samples to verify the submitted test records at the Government's expense. When the first test results indicate that the fasteners do not meet the specified requirements, the additional test will be at the Contractor's expense. The fasteners will be rejected after two tests failing to meet the requirements.

2.1.4 Stone Fill

2.1.4.1 General

For gabions, the ability to function properly depends upon their stability, which is partly depending upon the rocks filling them. Rock sizes should be chosen to prevent them from falling through the mesh of the gabions. The rock has also to withstand natural weathering processes during the life of the project that would cause it to breakdown to sizes smaller than the wire mesh opening dimensions. Rock to fill gabions shall be durable and of suitable quality to ensure permanence in the structure and climate in which it is to be used.

a. Delivery. Rock shall be delivered to the work site in a manner to minimize its reduction in sizes (breakdown) during the handling of the rock, and be placed and secured within the assembled and interconnected gabion.

b. Sources. The sources from which the Contractor proposes to obtain the material shall be selected well in advance of the time when the material will be required in the work. The inclusion of more than 5% by weight of dirt, sand, clay, and rock fines will not be permitted. Rock may be of a natural deposit of the required sizes, or may be crushed rock produced by any suitable method and by the use of any device that yields the required size limits chosen in TABLE 4.

2.1.4.2 Stone Quality

Stone fill, crushed stone, shall meet the quality requirements of ASTM C 33, and freezing and thawing requirements of ASTM D 5312,COE CRD-C 144 for the region of the United States in which the structure will be constructed. Stone fill for the gabions shall be provided from stone ballast which meets the specification of New York State Department of Transportation - NYSDOT Item 620-2.02, Stone Filling - Medium.

2.1.4.3 Gradation

Gradation of stone for gabions shall be performed every 1000 tons placed under this contract in accordance with ASTM C 136. Sizes of rock to fill gabions are chosen on the basis of the mesh sizes, the structure's thickness, and within the limits shown in TABLE 4. Within each range of sizes, the rock shall be large enough to prevent individual pieces from passing through the mesh openings. Each range of sizes may allow for a variation of 5% oversize rock by weight, or 5% undersize rock by weight, or both.

a. Oversize Rock. In all cases, the sizes of any oversize rock shall allow for the placement of three or more layers of rock within each gabion compartment.

b. Undersize Rock. In all cases, undersize rock shall be placed within the interior of the gabion and shall not be placed on the exposed surface of the structure. There shall be a maximum limit of 5% undersize or 5% oversize rock, or both, within each gabion compartment. The required rock gradation is reported in Table 4.

TABLE 4

Required rock gradation for gabions

Type of structure	Thickness (height) inch	Rock sizes inch
Gabions	12	4 - 8
Gabions	18 or higher	4 - 8

PART 3 EXECUTION

3.1 MATERIAL DELIVERY

Gabions shall be delivered with all components mechanically connected at the production facility. All gabions are supplied in the collapsed form, either folded or bundled or rolled, for shipping. Bundles are banded together at the factory for ease of shipping and handling.

a. Gabions shall be delivered to the jobsite labeled in bundles. Labels shall show the dimensions of the gabions included, the number of pieces and the color code.

3.2 FOUNDATION PREPARATION

Foundation preparation shall not take place on frozen or snow-covered ground. After excavation or stripping, to the extent indicated on the drawings or as directed by the Contracting Officer, all remaining loose or otherwise unsuitable materials shall be removed. All depressions shall be carefully backfilled to grade. If pervious materials are encountered in the foundation depressions, the areas shall be backfilled with free-draining materials. Otherwise, the depressions shall be backfilled with suitable materials from adjacent required excavation, or other approved source, and compacted to a density at least equal to that of the adjacent foundation. Any debris that will impede the proper installation and final appearance of the gabion layer shall also be removed, and the voids carefully backfilled and compacted as specified above. Immediately prior to placing the geotextile and overlining material, the Contracting Officer shall inspect the prepared foundation surface, and no material shall be placed thereon until that area has been approved.

3.3 ASSEMBLY

3.3.1 Welded wire fabric Gabions

The Gabions shall be opened and unfolded on a flat, hard surface. The units shall be rotated into position and the edges joined with fasteners for assembly. Where spiral fasteners are used, the ends shall be crimped to secure them in place. Where lacing wire is used, the wire shall be wrapped with alternating double and single loops with spacings not to exceed 6 inches. Ends shall be secured with two complete revolutions and finished with a one-half hitch. The same fastening procedures shall be used to secure interior diaphragms and end panels. When two gabions are placed side by side, the two end panels may be connected along the vertical

edges with a single spiral fastener.

3.4 LACING OPERATIONS

3.4.1 Welded Wire Mesh Gabions

Either lacing wire or spiral binders are permitted to lace welded wire mesh Gabions. The empty units shall be placed on the foundation and interconnected with the adjacent unit along the top, bottom and vertical edges using spiral fasteners. Lacing wire may be used in lieu of spiral binders for the interconnection of gabions as specified above. The connection with lacing wire or spiral binders shall be based on the minimum panel to panel joint strength as specified in TABLE 3. Spiral binders shall be screwed along the connecting edges, and then each end crimped to secure the spiral in place. Each layer of gabions shall be interconnected to the underlying layer along the front, back and sides.

3.5 INSTALLATION AND FILLING

Empty gabion units shall be assembled individually and placed on the approved surface to the lines and grades as shown or as directed, with the sides, ends, and diaphragms erected in such a manner to ensure the correct position of all creases and that the tops of all sides are level. All gabion units shall be properly staggered horizontally and vertically as shown in the construction drawings. Finished gabion structures shall have no gaps along the perimeter of the contact surfaces between adjoining units. All adjoining empty gabion units shall be connected along the perimeter of their contact surfaces in order to obtain a monolithic structure. All lacing wire terminals shall be securely fastened. All joining shall be made through selvedge-to-selvedge or selvedge-to-edge wire connection; mesh-to-mesh or selvedge-to-mesh wire connection is prohibited except in the case where baskets are offset or stacked and selvedge-to-mesh or mesh-to-mesh wire connection would be necessary. As a minimum, a fastener shall be installed at each mesh opening at the location where mesh wire meets selvedge or edge wire.

a. The initial line of basket units shall be placed on the prepared foundation and adjoining empty baskets set to line and grade, and common sides with adjacent units thoroughly laced or fastened. They shall be placed in a manner to remove any kinks from the mesh and to a uniform alignment. The basket units then shall be partially filled to provide anchorage against deformation and displacement during the filling operation. The stone shall be placed in the units as specified in paragraph Stone Fill, subparagraph Gradation, part b.

b. Undue deformation and bulging of the mesh shall be corrected prior to further stone filling. Care shall be taken, when placing the stone by hand or machine, to assure that the PVC coating on gabions will not be damaged. All visible faces shall be filled with some hand placement to ensure a neat and compact appearance and that the void ratio is kept to a minimum.

c. Gabions shall be uniformly overfilled by about 1 to 2 inches to compensate for future rock settlements. Gabions can be filled by any kind of earth-filling equipment, such as a backhoe, gradall, crane, etc. The

maximum height from which the stones may be dropped into the baskets shall be 3 to 4 feet. If PVC coated materials are used, no work shall take place unless the ambient temperature is above 20 degrees F.

3.5.1 Welded wire fabric Gabions

After the foundation has been leveled, the assembled gabions shall be placed in their proper location to form the structure. Care shall be taken to ensure that the top of the diaphragms are aligned correctly. The diaphragms shall be securely connected by either spiral binders or lacing wire. Gabions shall be connected together and aligned before filling them with 4 to 8 inch diameter rocks. Rock filling material shall be as specified in paragraph Gradation and shall be placed in 1 foot lifts. The fill layer shall be carefully hand-packed and braced to prevent bulging. Stiffeners shall be provided every 12 inch levels for 3 foot or higher gabions. Stiffeners shall be formed from lacing wire and placed across the corners at 12 inches from the corner, providing a diagonal bracing. Preformed hooked stiffeners can be utilized. Care shall be taken to ensure the number of voids is minimized by using a well-graded stone and avoiding large rocks in order to achieve a dense, compact compartment. After each 1 foot lift has been placed, it shall be leveled for the next lift. Almost all gabion structures consist of more than one course of gabions; in order that the individual gabions may become incorporated into one continuous structure, they shall be wired to neighboring gabions and the course below, before filling. Gabions shall be uniformly overfilled by about 1 to 2 inches to compensate for future rock settlements.

3.5.2 Non-rectangular Shapes

Gabion units can conform to bends up to a radius of curvature of 60 to 70 feet without alterations. Units shall be securely connected together first, and be placed to the required curvature, holding them in position by staking the units to the ground with hardwood pegs before filling. For other shapes, bevels and miters can be easily formed by cutting and folding the panels to the required angles.

3.6 CLOSING

Lids shall be tightly secured along all edges, ends and diaphragms in the same manner as described for assembling. Adjacent lids may be securely attached simultaneously. The panel edges shall be pulled to be connected using the appropriate closing tools where necessary. Single point leverage tools, such as crowbars, may damage the wire mesh and shall not be used. All end wires shall then be turned in.

-- End of Section --

SECTION 02378A

GEOTEXTILES USED AS FILTERS
05/95

PAYMENT ITEM NO. 0004 GEOTEXTILES (FILTER FABRIC)

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 123	(1996a) Standard Terminology Relating to Textiles
ASTM D 4354	(1996) Sampling of Geosynthetics for Testing
ASTM D 4355	(1992) Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
ASTM D 4491	(1999) Water Permeability of Geotextiles By Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1999) Determining Apparent Opening Size of a Geotextile
ASTM D 4833	(1988; R 1996) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
ASTM D 4873	(1997) Identification, Storage, and Handling of Geosynthetic Rolls
ASTM D 4884	(1996) Strength of Sewn or Thermally Bonded Seams of Geotextiles

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-2-1601	(1991; Change 1-1994) Hydraulic Design of Flood Conttol Channels

1.2 UNIT PRICES

1.2.1 Geotextiles

1.2.1.1 Payment

Payment will be made at the contract unit price and will constitute full compensation to the contractor for providing all plant, labor, material, and equipment and performing all operations necessary for the complete and satisfactory installation of the geotextile. The following items are included in the contract unit price for Geotextiles and will not be counted a second time in the process of determining the extent of geotextile placed: Material and associated equipment and operation used in laps, seams, or extra length; securing pins and associated material, equipment, and operations; and material and associated equipment and operations used to provide cushioning layer of sand or gravel or both to permit increase in allowable drop height of stone. No payment will be made for geotextiles replaced because of waste, contamination, damage, repair, or due to contractor fault or negligence.

1.2.1.2 Measurement

Installed geotextiles will be measured for payment in place to the nearest squarefeet of protected area as delineated in the drawings.

1.2.1.3 Unit of Measure

Unit of measure: squarefeet.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Samples

Geotextile; FIO.

If requested,submit geotextile samples for testing to determine compliance with the requirements in this specification. When required, submit samples a minimum of 30 days prior to the beginning of installation of the same textile. Upon delivery of the geotextile, submit duplicate copies of the written certificate of compliance signed by a legally authorized official of the manufacturer. The certificate shall state that the geotextile shipped to the site meets the chemical requirements and exceeds the minimum average roll value listed in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Upon request, supply quality control and quality assurance tests for the geotextile. All samples provided shall be from the same production lot as will be supplied for the contract, and shall be the full manufactured width of the geotextile by at least10 feet long, except that samples for seam strength may be a full width sample folded over and the edges stitched for a length of at least5 feet. Samples submitted for testing shall be identified by manufacturers lot designation. For needle punched geotextile, the manufacturer shall certify that the geotextile has been inspected using permanent on-line metal detectors and does not contain any needles.

SD-07 Certificates

Geotextile; FIO.

All brands of geotextile and all seams to be used will be accepted on the basis of mill certificates or affidavits. Submit duplicate copies of the mill certificate or affidavit signed by a legally authorized official from the company manufacturing the geotextile. The mill certificate or affidavit shall attest that the geotextile meets the chemical, physical and manufacturing requirements stated in this specification.

1.4 SHIPMENT, HANDLING, AND STORAGE

1.4.1 Shipment and Storage

Only approved geotextile rolls shall be delivered to the project site. All geotextile shall be labeled, shipped, stored, and handled in accordance with ASTM D 4873. No hooks, tongs, or other sharp instruments shall be used for handling geotextile.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Geotextile

2.1.1.1 General

The geotextile shall be a woven pervious sheet of plastic yarn as defined by ASTM D 123. The geotextile shall equal or exceed the minimum average roll values listed in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Strength values indicated in the table are for the weaker principal direction.

TABLE 1
MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE

PROPERTY	UNITS	ACCEPTABLE VALUES	TEST METHOD
GRAP STRENGTH	lb	200	ASTM D 4632
SEAM STRENGTH	lb	200	ASTM D 4632
PUNCTURE	lb	80	ASTM D 4833
TRAPEZOID TEAR	lb	40	ASTM D 4533
PERMEABILITY	cm/sec		ASTM D 4491
APPARENT OPENING SIZE	U.S. SIEVE	<#100 >#50	ASTM D 4751
PERMITTIVITY	sec -1	2	ASTM D 4491
ULTRAVIOLET DEGRADATION	Percent	50 AT 500 Hrs	50 AT 500 Hrs ASTM D 4355

2.1.1.2 Geotextile Fiber

Fibers used in the manufacturing of the geotextile shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of polyolefins, polyesters, or polamides. Stabilizers and/or inhibitors shall be added to the base polymer if necessary to make the filaments resistant to deterioration caused by ultraviolet light and heat exposure. Reclaimed or recycled fibers or polymer shall not be added to the formulation. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the edges. The edges of the geotextile shall be finished to prevent the outer fiber from pulling away from the geotextile.

2.1.2 Seams

The seams of the geotextile shall be sewn with thread of a material meeting the chemical requirements given above for geotextile yarn or shall be bonded by cementing or by heat. The sheets of geotextile shall be attached at the factory or another approved location, if necessary, to form sections not less than36 feet wide. Seams shall be tested in accordance with method ASTM D 4884. The strength of the seam shall be not less than 90 percent of the required grab tensile strength of the unaged geotextile in any principal direction.

2.1.3 Securing Pins

The geotextile shall be secured to the embankment or foundation soil by pins to prevent movement prior to placement of revetment materials. Other appropriate means to prevent movement such as staples, sand bags, and stone could also be used. Securing pins shall be inserted through both strips of overlapped geotextile along the line passing through midpoints of the overlap. Securing pins shall be removed as placement of revetment materials are placed to prevent tearing of geotextile or enlarging holes maximum spacing between securing pins depends on the steepness of the embankment slope. The maximum pins spacing shall be equal to or less than the values listed in TABLE 2, MAXIMUM SPACING FOR SECURING PINS. When windy conditions prevail at the construction site, the number of pins should be increased upon the demand of the Contracting Officer. Terminal ends of the geotextile shall be anchored with key trench or apron at crest, toe of the slope and upstream and downstream limits of installation.

TABLE 2
MAXIMUM SPACING FOR SECURING PINS

EMBANKMENT	SPACING, feet
STEEPER THAN 1V ON 3H	2
1V ON 3H TO 1V ON 4H	3
FLATTER THAN 1V ON 4H	5

2.2 INSPECTIONS, VERIFICATIONS, AND TESTING

2.2.1 Manufacturing and Sampling

Geotextiles and factory seams shall meet the requirements specified in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Geotextiles shall be randomly sampled in accordance with ASTM D 4354 (Procedure Method A). Factory seams shall be sampled at the frequency specified in ASTM D 4884.

2.2.2 Site Verification and Testing

Samples shall be collected at approved locations upon delivery to the site at the request of the Contracting Officer. Samples shall be tested to verify that the geotextile meets the requirements specified in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Samples shall be identified by manufacturers name, type of geotextile, lot number, roll number, and machine direction. Testing shall be performed at an approved laboratory. Test results from the lot under review shall be submitted and approved prior to deployment of that lot of geotextile. Rolls which are sampled shall be immediately rewrapped in their protective covering.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Surface on which the geotextile will be placed shall be prepared to a relatively smooth surface condition, in accordance with the applicable portion of this specification and shall be free from obstruction, debris, depressions, erosion feature, or vegetation. Any irregularities will be removed so as to insure continuous, intimate contact of the geotextile with all the surface. Any loose material, soft or low density pockets of material, will be removed; erosion features such as rills, gullies etc. must be graded out of the surface before geotextile placement.

3.2 INSTALLATION OF THE GEOTEXTILE

3.2.1 General

The geotextile shall be placed in the manner and at the locations shown. At the time of installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation or storage.

3.2.2 Placement

The geotextile shall be placed with the long dimension perpendicular to the shoreline and laid smooth and free of tension, stress, folds, wrinkles, or creases. The strips shall be placed to provide a minimum width of36 inches of overlap for each joint. The placement procedure requires that the length of the geotextile be approximately 20 percent greater than the slope length. The Contractor shall adjust the actual length of the geotextile used based on initial installation experience. Temporary pinning of the geotextile to help hold it in place until the bedding layer and/or riprap is placed shall be allowed. The temporary pins shall be removed as the granular material or riprap is placed to relieve high tensile stress which may occur during placement of material on the geotextile. Design protection of riprap should be in compliance with EM 1110-2-1601. Trimming shall be performed in such a manner that the geotextile shall not be damaged in any way.

3.3 PROTECTION

The geotextile shall be protected at all times during construction from contamination by surface runoff and any geotextile so contaminated shall be removed and replaced with uncontaminated geotextile. Any damage to the geotextile during its installation or during placement of bedding materials or riprap shall be replaced by the Contractor at no cost to the Government. The work shall be scheduled so that the covering of the geotextile with a layer of the specified material is accomplished within 7 calendar days after placement of the geotextile. Failure to comply shall require replacement of geotextile. The geotextile shall be protected from damage prior to and during the placement of riprap or other materials. This may be accomplished by limiting the height of drop to less than1 foot, by placing a cushioning layer of sand or gravel on top of the geotextile before placing the material, or other methods deemed necessary. Care should be taken to ensure that the utilized cushioning materials shall not impede the flow of water. Before placement of riprap or other materials, the Contractor shall demonstrate that the placement technique will not cause damage to the geotextile. In no case shall any type of equipment be allowed on the unprotected geotextile.

3.4 PLACEMENT OF CUSHIONING MATERIAL

Placing of cushioning material shall be performed in a manner to insure intimate contact of the geotextile with the prepared surface and with the cushioning material. The placement shall also be performed in a manner that shall not damage the geotextile including tear, puncture, or abrasion. On sloping surfaces the cushioning material shall be placed from the bottom of the slopes upward. During placement, the height of the drop of riprap material shall not be greater than12 inches. Any geotextile damaged beneath the cushioning material shall be uncovered as necessary and replaced at no cost to the Government.

3.5 OVERLAPPING AND SEAMING

3.5.1 Overlapping

The overlap of geotextile rolls shall be36 inches. Appropriate measures will be taken to insure required overlap exists after cushion placement.

3.5.2 Sewn Seams

High strength thread should be used such that seam test should conform to ASTM D 4884. The thread shall meet the chemical, ultraviolet, and physical requirements of the geotextile, and the color shall be different from that of the geotextile. The seam strength shall be equal to the strength required for the geotextile in the direction across the seam. Overlapping J-type seams are preferable over prayer-type seams as the overlapping geotextile reduces the chance of openings to occur at the seam. Double sewing shall be used specially for field seams to provide a safety factor against undetected missed stitches.

-- End of Section --

SECTION 02381

RIPRAP

PAYMENT NO. 0005 RIPRAP
PAYMENT NO. 0010 RESHAPING EXISTING RIPRAP
PAYMENT NO. 0011 STRUCTURAL BEDDING MATERIAL (4-INCH)
PAYMENT NO. 0012 3/4-INCH CRUSHED STONE

PART 1 GENERAL

1.1 REFERENCES

The most recent version of the publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic reference only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1556	(1990; R 1996) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft)
ASTM D 4791	(1999) Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-2-1601	(1994) Hydraulic Design of Flood Control Channels
EM 1110-2-1906	(1986) Laboratory Soils Testing

NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT)

NYSDOT	(1995)Standard Specifications Construction and Materials

1.2 UNIT PRICES

1.2.1 Riprap

1.2.1.1 Payment

Payment for riprap, bedding and crushed stone and reshaped (repositioned) existing surface riprap satisfactorily placed will be made at the applicable contract unit price. Price and payment shall constitute full

compensation for furnishing, hauling, handling, placing, and maintaining the riprap stone until final acceptance by the Government. Payment for reshaped (repositioned) riprap will be at 70% of the unit price for new riprap delivered to the site. No separate payment will be made for the stockpiling of riprap, and all cost in connection with stockpiling shall be included in the contract unit price for riprap. Temporary construction entrance as shown on the contract drawings will be included in the unit price for riprap.

1.2.1.2 Measurement

Riprap (new or reshaped) will be measured for payment as the volume determined by multiplying the area, as measured in the field, of the surface on which the riprap is placed, by the thickness of the riprap measured perpendicular as dimensioned on the contract drawings. Measurement of the bedding stone and crushed stone will be the volume generated, in cubic yards, between the ground surface immediately before stone placement, and the finished surface after stone after stone placement but prior to placement of overlying riprap. No measurement will be made for the temporary construction entrance.

1.2.1.3 Unit of Measure

Unit of measure: cubic yard.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-09 Reports

Riprap Quality and Density; G, A

Submit information/data from the proposed quarry regarding the quality and density of the proposed riprap source.

Source of Rock; G, A

Submit the name and point of contact for the quarry that will supply the rock for the riprap.

1.4 TERMINOLOGY

1.4.1 Bank Stabilization

This paragraph explains certain terminology which is common to construction of bank stabilization work and which may not be self explanatory in the subsequent applicable provisions of he technical specifications and on the drawings.

1.4.2 Standard Drawings

Details of various types of structures in general use are shown on standard drawings forming a part of these specifications

1.4.3 Stone Protection and Stone Backfill

Stone protection is defined as a system which includes bedding material beneath a layer or layers of riprap. Stone protection is placed around structures in slack water or within a dewatered site. Stone protection may also be used to protect channel banks when it is placed in the dry or in slack water. Stone backfill is defined as the crushed stone placed and compacted between the existing shoreline and the new caisson and sheet pile bulkhead.

1.4.4 Riprap

Riprap is defined as a material having a gradation band similar to those specified in NYSDOT Specifications, Section 620 - Bank and Channel Protection. Riprap is normally produced by mechanical methods with a jaw crusher and grizzly after the stone has been mined by blasting in a quarry.

PART 2 PRODUCTS

2.1 STONE

2.1.1 General

The Contractor shall use only rock that is blasted from an approved source.

2.1.2 Blasting Operations for Riprap and Stone Fill Source at Quarry Site

Blasting operations shall be conducted at the quarry in a manner that shall produce rock conforming to the requirements specified and may involve selective quarrying, handling, processing, blending, and loading as necessary, all of which shall be as specified in Section 01451 CONTRACTOR QUALITY CONTROL. Blasting and handling of rock shall be controlled by the Contractor to produce rock of the size ranges and quality specified. Techniques such as the use of proper hole diameter, hole depth, hole angle, burden and spacing distances, types and distribution of explosives, delay intervals and sequence, removal of muck piles between each shot, and special handling techniques are required as necessary to produce the specified materials. All aspects of blasting operations shall be specially designed so that the end products is not damaged from the blasting technique and that the stone is suitable for the intended purpose.

2.1.2.1 Curing Stone

The Contractor shall conduct curing operations on freshly blasted stone to allow it to release stored energy and moisture and to allow the stone to demonstrate that it will not fracture during the energy release and dry-out phase. Stones of sizes which are individually picked shall be temporarily stockpiled at the quarry site a minimum of 30 calendar days before being

shipped to the project site, unless this requirement is waived by the Contracting Officer. Such waiver will be granted only if the stone has characteristics that make curing unnecessary.

2.1.2.2 Temporary Storage

Storage of stone materials subsequent to shipment from the quarry and prior to permanent placement in the required work shall be subject to approval of the Contracting Officer.

2.1.3 Gradation

Gradation testing will be in accordance with NYSDOT procedures, including a visual inspection of the proposed riprap at the quarry site. The Contractor shall coordinate with the Contracting Officer to provide for a visual gradation inspection of the proposed riprap prior to source approval.

2.1.3.1 Proportional Dimension Limitations

Dimensional requirements shall be in accordance with NYSDOT Heavy Stone Fill.

2.1.3.2 Riprap Stockpile

Storage of riprap at the worksite is not to be confused with offsite stockpiling of riprap. If the Contractor elects to provide offsite stockpiling areas, the Contracting Officer shall be notified by the Contractor of all such areas. The Contractor's stockpile shall be a maximum of 12 feet high and formed by a series of layers of truckload dumps, where the rock essentially remains where it is placed. Subsequent layers shall be started 10 feet from the edge of the previous layer so that the rock will not roll down the edges of the previous layers. The first layer shall be a maximum of 6 feet high. After being stockpiled, any riprap, which has become contaminated with soil or refuse shall not be put into the work unless the contaminating material has been removed from the riprap, prior to placement.

2.1.3.3 Worksite Stockpile

Riprap delivered to the work sites, which requires temporary storage landward of the top of slope, shall be placed in a container suitable for storing the riprap without waste. If the sand-clay-gravel or crushed stone pad method is used, the pad shall have a minimum thickness of at least 6 inches. The container or sand-clay-gravel or crushed stone pad method shall be subject to approval prior to delivery of the riprap. Upon completion of the work, the storage areas shall be cleaned of all storage residue and returned to their natural condition. Temporary storage of riprap at the worksite will be allowed, provided the stockpile toe of the riprap is no cleaner than 100 linear feet from the closest edge of the stream's top slope, and the amount shall not exceed 200 tons unless otherwise approved.

2.1.3.4 Offsite Stockpile

In areas where riprap is stockpiled for placement as allowed by the Contracting Officer, the area shall have excess rock removed prior to completion of work. All rock and spalls greater than 3 inches in diameter shall be removed. Where rocks may have become due to soft ground or operation of the equipment, the rock shall be disposed of as directed. After the rock has been removed, the storage area shall be graded, dressed, and filled to return the ground surface as near as practical to the condition that existed prior to construction.

2.1.3.5 Riprap Gradation

a. Riprap shall be well graded and shall conform to the material requirements of NYSDOT Heavy Stone Fill (Dry Rip-Rap), as summarized below:

TABLE 1
(FOR RIPRAP)

CLASS NOTE	MINIMUM TONE THICKNESS	STONE SIZE	PERCENT OF TOTAL BY WEIGHT
600#	12"	Heavier than 600 lbs	70% - 100%
		Less than 400 lbs	0% - 10%
1800# (1)	18"	Heavier than 1800 lbs	70% - 100%
		Less than 900 lbs	0% - 5%

NOTE (1) All riprap shall be rectangularly shaped to provide a tight fit between stones.

b. Stone sizes, other than weights, refer to the average of the maximum and minimum dimensions of a stone particle as estimated by the Contracting Officer.

c. Materials shall contain less than 20 percent of stones with a ratio of maximum to minimum dimension greater than three.

d. Materials shall contain a sufficient amount of stones smaller than the average stone size to fill in the spaces between the larger stones.

PART 3 EXECUTION

3.1 BASE PREPARATION

Areas on which geotextile, bedding material and riprap are to be placed shall be graded and/or dressed to conform to cross sections shown on the contract drawings within an allowable tolerance of plus 2 inches and minus 2 inches from the theoretical slope lines and grades. The prepared base shall be approved by the Contracting Officer. Where such areas are below the allowable minus tolerance limit they shall be brought to grade by fill with bedding stone. Subaqueous areas (i.e., below MLW) on which bedding stone and riprap are to be placed will not require grading. Riprap and bedding stone below the water line shall be placed in accordance with the

cross sections shown on the contract drawings. Immediately prior to placing the geotextile and bedding layers, the prepared base will be inspected by the Contracting Officer and no material shall be placed thereon until that area has been approved.

3.2 GEOTEXTILE

3.2.1 Installation

Installation of geotextile shall be as specified in Section 02378 GEOTEXTILES USED AS FILTERS.

3.3 PLACEMENT OF RIPRAP

3.3.1 General

Riprap shall be placed on the specified structural bedding material or other approved and prepared subbase and within the limits shown on the contract drawings. Dry fitted riprap shall consist of stones shaped as nearly as practicable in the form of right rectangular prisms, unless otherwise noted on the contract drawings. Bulkhead stones placed along the Hudson River shoreline shall be as follows:

a. Between Martin and Cornell Boathouses: At least 70% of the surface stone by weight shall weigh in excess of 600 lbs each, with not more than 10% less than 400 lbs.

b. Between Sta. 0+00 and 7+44: At least 70% of the surface stone by weight, shall weigh in excess of 1,800 lbs each, and the remainder of the stones shall weigh between 900 and 1,800 lbs each, with not more than 5% less than 900 lbs.

c. River Bulkhead Work will require careful selection and placement of riprap stones on a prepared bedding material. The final finished surface of the placed stones shall be uniform with a slope not exceeding 2H:1V (27 degrees from the horizontal). The final finished surface shall be such that visitors may safely access the water's edge for fishing and other recreational purposes.

d. The ground surface on which the geotextile and overlying bedding and fitted riprap stone is to be placed, shall be free of brush, trees, stumps and other objectionable material and shall be dressed to a smooth surface. All soft or spongy material shall be removed to the depth shown on the contract drawings or as directed by the Contracting Officer and replaced with approved compacted, granular material.

3.3.2 Structural Bedding Material

Bedding material shall be composed of gravel, free of soft, non-durable particles, organic material, and thin or elongated particles. Bedding material shall meet the following gradation requirements:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING
4 inch	100
1 inch	15 to 60
1/4 inch	0 to 25
No. 40	0 to 10

3.3.3 Fill Stone

Placement of 3/4" fill stone within steel bulkhead walls shall not be done until wales and connections are installed, tightened, and inspected; and the structure aligned within the required tolerances; and the concrete encasement is poured and has reached its 28-day strength as specified in accordance with the contract drawings. The fill materials shall be uniformly deposited in maximum 3-foot lifts and in such a manner that there will be not undue later settlement of the materials and that the structure will not be subjected to undue strains, deformations, or other damage. Responsibility for damage to the structure due to filling operations shall rest with the Contractor. The stone shall be distributed and consolidated by use of a vibratory hammer or similar vibrating hammer or similar vibrating equipment affixed to a steel beam which shall be inserted into the fill at intervals not greater than 5 feet. The vibratory operations shall be continued until there is no visual continuation of settlement. Other distribution or consolidation methods may be used when approved by the Contracting Officer. Stone above water shall be compacted to ninety percent (90%) of maximum density obtained at optimum moisture content as determined by the Contractor in accordance with EM 1110-2-1906. At least one (1) compaction test shall be performed by the Contractor for each ton of material placed.

3.3.4 Placement of Riprap on Geotextile or Bedding Stone

Riprap shall be placed in such manner as to produce a well-graded mass of rock with the minimum practicable percentage of voids, and shall be constructed, within the specified tolerance, to the lines and grades shown on the contract drawings. Placement shall begin at the bottom of the area to be covered and continue up slope. Subsequent loads of material shall be placed against previously placed material in such a manner as to ensure a relatively homogenous mass. A tolerance of plus 4 inches or minus 2 inches from the slope lines and grades shown on the drawings will be allowed in the finished surface of the riprap, except that either extreme of such tolerance shall not be continuous over an area greater than 200 square feet. The average tolerance of the entire job shall have no more than 50 percent of the tolerance specified above. No stone shall be dropped through air from a height greater than 3 feet and stones heavier than 500 lbs. shall not be dropped from a height greater than 2 feet. The larger stones shall be well distributed and the entire mass of stones in their final position shall be roughly graded to conform to the gradation specified in paragraph RIPRAP, GRADATION. The finished riprap shall be free from objectionable pockets of small stones and clusters of larger stones. Surface riprap stone will be placed so as to assure interlocking with surface contact of the riprap on at least 3 of the 4 adjacent sides.

Placing riprap by dumping it into chutes, or by similar methods likely to cause segregation of the various sizes, will not be permitted. Placing riprap by dumping it at the top of the slope and pushing it down the slope will not be permitted. No equipment shall be operated directly on the completed stone protection system. The desired distribution of the various sizes of stones throughout the mass shall be obtained by selective loading of the material at the quarry or other source; by controlled dumping of successive loads during final placing; or by other methods of placement which will produce the specified results. All dump trucks used in placing the riprap shall be equipped with bottom hinged tailgates. The gate releasing mechanism shall be arranged so that it may be operated only from, at, or near the front of the truck. Rearranging of individual stones will be required to the extent necessary to obtain a well-graded distribution of stone sizes as specified above. The Contractor shall maintain the stone protection until accepted by the Contracting Officer and any material displaced by any cause shall be replaced by the Contractor at his expense and to the lines and grades shown on the contract drawings.

3.4 PLACEMENT OF SUBGRADE

In areas where riprap and bedding stone are specified, the subgrade shall be dressed as necessary to provide an even surface for placement of the geotextile and overlying stone.

3.5 STONE WORK

Riprap and bedding stones shall be placed on the bank or overbank areas by crane or dragline equipped with skip, grapple, clamshell, or rock bucket; by front-end loader or bulldozer; or by trucks or other methods approved by the Contracting Officer. Unless otherwise approved by the Contracting Officer, the maximum capacity of dragline buckets used to place riprap and stone paving on the bank will be limited to 3 cubic yards.

3.5.1 Crushed Stone

Stone may be required for use to fill scoured areas or depression in the subgrade, or as a blanket in the construction or repair of drains. Crushed stone is normally placed 4 inches in thickness above the water surface. Placement above the water shall be to the lines and grade specified or as staked in the field; below the water surface, in the amount specified or as directed at the time of placing.

3.5.2 Stone Fills Behind the Sheeting Bulkhead

Stone fills specified shall be placed to the lines and grades specified or as staked in the field behind the new bulkhead and fronting the existing shoreline. Where specified below the water surface, the material may be placed by any method elected by the Contractor, subject to approval by the Contracting Officer. The location of the fill and the quantities to be placed at each underwater location shall be as specified or as directed at the time of placing.

3.5.3 Compaction

Use hand-operated, plate-type, vibratory, or other suitable hand tampers in areas not accessible to larger rollers or compactors. Avoid damaging pipes and protective pipe coatings. Compact material in accordance with the following unless otherwise specified. If necessary, alter, change, or modify selected equipment or compaction methods to meet specified compaction requirements.

Compact initial backfill material surrounding pipes, cables, conduits, or ducts, to 90 percent of ASTM D 1557 maximum density except where bedding and backfill are the same material. Where bedding and backfill are the same material, compact initial backfill to the density of the bedding.

3.6 RESHAPE (REPOSITION) RIPRAP

Where voids exist in the top layer of riprap, as indicated on the contract drawings, and to interlock properly with new riprap and eliminate voids, existing riprap shall be removed, stockpiled, as necessary, and replaced to create a void-free, well-interlocked outer riprap surface.

3.7 FIELD QUALITY CONTROL

Test gravel and crushed stone bedding and backfill for conformance to specified requirements. Perform at least one of each of the required tests for each material provided. Perform sufficiently in advance of construction so as not to delay work. Provide additional tests as specified above for each change of source. Perform density and moisture tests in randomly selected locations and in accordance with ASTM D 1556 as follows: a. Bedding and backfill in trenches: One test per 50 linear feet in each lift. b. Appurtenance structures: One test per 100 square feet or fraction thereof in each lift.

-- End of Section --

SECTION 02455A

DRILLED FOUNDATION CAISSONS (PIERS), AND CAST-IN-PLACE CONCRETE FILLED PILES, STEEL CASINGS
11/97

PAYMENT ITEM NO. 0015 PROOF TESTS HOLES
PAYMENT ITEM NO. 0016 PENETRATION TESTS
PAYMENT ITEM NO. 0017 STEEL CAISSONS WITH SHEET PILE CONNECTORS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 252	(1998) Welded and Seamless Steel Pipe Piles
ASTM A 615/A 615M	(1996a) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 616/A 616M	(1996a) Rail-Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A 617/A 617M	(1996a) Axel-Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM D 1143	(1981; R 1994e1) Piles Under Static Axial Compressive Load
ASTM D 1586	(1999) Penetration Test and Split-Barrel Sampling of Soils

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1	(1998) Structural Welding Code - Steel
AWS D1.4	(1998) Structural Welding Code - Steel Reinforcing Steel

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC (SM 901)	(2000) Load and Resistance Factor Design Specification for Hollow Structural Sections (HSS)

NATIONAL READY-MIXED CONCRETE ASSOCIATION (NRMCA)

NRMCA QC 3	(1984) Quality Control Manual: Section 3, Plant Certifications Checklist: Certification of Ready Mixed Concrete Production Facilities

1.2 BASIS FOR BIDS

1.2.1 Cast-In-Place Concrete Filled Piles, Steel Casings

Bids shall be based on the number of piles as indicated, and on lengths from lower tip of the inner casing to the top of the outer casing to cutoff as follows:

Number of piles	Length,feet
15	as indicated on drawings

Payment will be on the basis of length of piling from top elevation to final tip elevation, established by the requirements specified elsewhere in this section. Should the total number of piles or the number of each length vary from that specified as the basis for bidding, an adjustment on the contract price and the time for completion will be made as per Section 00700. No additional payment will be made for cutting off piles, for any portion of a pile remaining above cutoff elevation, or for broken, damaged, or rejected piles.

1.2.2 Drilled Foundation Caissons (Piers)

The bid for drilled foundation caissons (piers) shall be based on the number and total length of caissons, established by top and bottom elevations and diameters, as indicated and specified. Adjustment of the contract will be made in accordance with the contract clauses in Section 00700, should the total length of caissons installed and approved be greater or less than the total length shown. The Contractor will not allow payment for rejected caissons or for those not conforming to specifications.

1.2.2.1 Penetration Test

Contract shall include 3 penetration tests. The Contracting Officer reserves the right to increase or decrease the number of penetration tests. Adjustment in the contract price will be made for each such increase or decrease by the amount bid for "Additional Penetration Test" or "omitted Penetration Test".

1.2.2.2 Proof Test Hole

Contractor shall include 3 proof test holes. The Contracting Officer reserves the right to increase or decrease the number of proof test holes. Adjustments in the contract price will be made for each such increase or decrease by the amount bid for "Additional Proof Test Hole" or "Omitted Proof Test Hole".

1.2.2.3 Additional Caisson Lengths

Additional caisson lengths will be paid for at the contract unit price for as per Section 00700 CONTRACT CLAUSES for each diameter of caisson installed as approved.

1.2.2.4 Casings Permanently Left in Place

Steel casings permanently left in place due to contract conditions:

Total pounds of steel beyond casings indicated will be paid for at the contract unit price as per Section 00700 CONTRACT CLAUSES.

1.2.2.5 Removal of Rock

Removal of rock within the limit of caissons will be included in the contract unit price for inner and outer caissons. Rock excavation is defined as any hard dense material that cannot be removed with caisson drilling equipment having the specified capacity and could only be removed by hand, air tools, blasting, or other specialized methods.

1.2.2.6 Removal of Obstructions Other Than Rock

Removal of obstructions other than rock within the limits of the caissons which cannot be removed using standard caisson drilling equipment with the specified capacity will be included in the contract unit price for inner and outer caissons.

1.3 BASIS OF PAYMENT

1.3.1 Unit Price for Cast-In-Place Concrete Filled Piles, Steel Casings

The Contracting Officer reserves the right to increase or decrease the total length of piles to be furnished and installed, by changing the foundation pile locations or elevations, requiring the installation of additional piles, or requiring omission of piles from the requirements shown and specified. Whether or not such changes are made, the Contractor will be paid at the contract unit price per linear foot, multiplied by the total linear feet of acceptable piles actually installed. Penetration tests and proof test holes are to be included as separate unit prices.

1.3.1.1 Full Compensation

Payment in accordance with the above paragraph, "Unit Price," shall constitute full compensation for furnishing, delivering, handling, and/or installing (as applicable) all material (i.e., inner casing, outer casing and concrete fill), labor and equipment necessary to meet contract requirements applicable to the foundation piles. The Contractor will not be allowed payment for withdrawn, broken or rejected piles, nor (except for control test piles) for a portion of any pile remaining above the cut-off point.

1.3.2 Unit Price for Drilled Foundation Caissons (Piers)

The Contracting Officer shall have the right to increase or decrease the linear footage of drilled foundation caissons to be furnished and installed by changing the foundation caisson elevations, by requiring the installation of additional caissons, or omission of caissons from the requirements shown and specified. Whether or not such changes are made, the Contractor shall be paid at the contract unit price per linear foot multiplied by the total linear feet of acceptable caissons actually installed provided, however, that in the event the Contracting Officer requires an increase or decrease in the linear footage of caissons furnished and installed, the contract unit price will be adjusted in accordance with Section 00700 CONTRACT CLAUSES.

1.3.2.1 Full Compensation

Payment in accordance with the above paragraph Unit Price shall constitute full compensation for furnishing, delivering, handling, penetration tests, proof hole test, and/or installing (as applicable) all material, labor and equipment necessary to meet contract requirements applicable to the foundation caissons. The Contractor will not be allowed payment for rejected caissons.

1.3.2.2 Penetration Tests

Contract shall include 3 penetration tests. The Contracting Officer reserves the right to increase or decrease the number of penetration tests. Adjustments in the contract price will be made for such increases or decreases by the amounts bid for "Additional Penetration Test" or "Omitted Penetration Test."

1.3.2.3 Proof Test Holes

Contract shall include 3 proof test holes. The Contracting Officer reserves the right to increase or decrease the number of proof test holes. Adjustments in the contract price will be made for such increases or decreases by the amounts bid for "Additional Proof Test Hole" or "Omitted Proof Test Hole."

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation; G, E

Drawings demonstrating compliance of driving equipment and steel casing with contract documents. Drawings shall include shop and erection details, casing details, end closures, splices, driving helmets, and reinforcement.

Drilling Pile Casings; , G E

A complete and accurate record of each drilled pile, within 3 days of completion of drilling. The record shall indicate the pile location (as drilled), driven length, embedded length, final elevations of tip and top, pile weight, butt and tip diameter, quantity and strength of concrete used in each pile, number of splices and locations. Any unusual conditions encountered during pile installation shall be recorded and immediately reported to the Contracting Officer.

Caissons; G, E

Detailed records in an approved form, for each caisson, showing shaft bell diameters, depths of test holes, top and bottom elevations, bearing strata description, casing description, water conditions, concrete strength, concrete volume, rock elevations,

dates of excavation and concrete placement, attachment of connecting piles and other pertinent information. Upon completion of caisson work, the Contractor shall provide a record of centerline locations based on the survey of the registered surveyor or engineer provided by the Contractor. In addition, corrective measures shall be similarly recorded. A complete tabulation of all records pertaining to approved caissons shall be delivered to the Contracting Officer.

SD-03 Product Data

Equipment; G, A

Descriptions of all pile installing equipment to be employed in the work, prior to commencement of pile installations.

SD-06 Test Reports

Penetration Tests; G, A

Test Results.

SD-07 Certificates

Caissons; G, A

A certified copy of the survey. Lines and levels shall be established and caisson centerline locations staked and maintained by a registered surveyor or engineer provided by the Contractor.

Qualifications; G, A

Qualifications of the foundation system Contractor shall show that he has been engaged in the successful installation of drilled foundation caissons for at least 5 years.

1.5 QUALIFICATIONS

1.5.1 Cast-In-Place Concrete Filled Piles, Steel Casings

The work shall be performed by a general contractor or a specialty subcontractor specializing in the specified foundation system and having experience installing the specified foundation system under similar subsurface conditions.

1.5.2 Drilled Foundation Caissons (Piers)

The work shall be performed by a specialty subcontractor, specializing in the specified foundation system and having experience installing the specified foundation system under similar subsurface conditions.

1.5.2.1 Welding

Detail and field welding shall be in accordance with AWS D1.1. Qualification of welding procedures, welders, and welding operators shall be in accordance with AWS D1.1, Section 5. Records of test results of welding procedures not prequalified and copies of records for each qualified welding operator, containing records on positions of welding and types of electrode qualifications, shall be kept by the Contractor and be

available for examination by the Contracting Officer.

1.6 EQUIPMENT

1.6.1 Pile Hammers

The hammer used shall have a delivered energy suitable for the total weight of the pile, the character of subsurface material to be encountered, and the pile capacity to be developed. The driving energy of the hammer shall be not less than 16,000 foot-pounds.

1.6.2 Driving Helmets and Pile Cushions

A driving helmet, cap block, and pile cushion shall be used between the top of the pile and the ram to prevent impact damage to the pile. The driving helmet, cap block and pile cushion combination shall be capable of protecting the head of the pile, minimizing energy absorption and dissipation, and transmitting hammer energy uniformly over the top of the pile. The driving helmet shall fit loosely around the top of the pile so that the pile is not restrained if the pile tends to rotate during driving. The pile cushion and cap block may be of solid wood or of laminated construction using plywood, softwood, or hardwood boards or other cushion material as approved by the Contracting Officer. The pile cushion shall completely cover the top surface of the pile and shall be retained by the driving helmet. The minimum thickness of the pile cushion and of the cap block shall be 3 inches each and the thickness shall be increased so as to be suitable for the size and length of pile, character of subsurface material encountered, hammer characteristics, and required driving resistance.

1.6.3 Caisson Drilling Equipment

Caisson drilling equipment shall have the minimum torque capacity and downward force capacity for the contract site conditions.

1.7 EXISTING CONDITIONS

Subsurface soil data logs are shown on the drawings. The subsurface investigation reports are available as indicated on the drawings.

1.8 SEQUENCE OF WORK FOR CAISSONS

Excavation of caissons or groups of caissons shall be performed so that concrete placement is a continuous operation performed the same day that the excavation is completed. Excavations shall not be left open overnight.

1.8.1 Acceptance

Concrete shall be placed within 3 hours after approval of the completed excavation.

1.8.2 Contractor Supervision

The Contractor shall provide for the supervision of all phases of drilled pier construction. Supervision shall be the Contractor's responsibility as outlined in Quality Control provisions of Section 00800 SPECIAL CONTRACT REQUIREMENTS. Each drilled pier excavation shall be checked by the Contractor for its depth, water removal, cleanup, workmanship, and for all tolerance requirements before any concrete is placed.

1.8.3 Government Inspection

The Contracting Officer will inspect each drilled pier excavation. Concrete shall not be placed until the excavation has been approved by the Contracting Officer. The Contractor shall furnish the Contracting Officer all necessary equipment required for proper inspection of drilled pier excavations.

1.8.4 Safety Precautions for Workmen and Inspectors

1.8.4.1 Life Line

Each person entering a drilled pier excavation shall be provided with a life line rigged so that the person can be immediately hoisted out of the excavation in an emergency. The life line shall be suitable for instant rescue, securely fastened to a shoulder harness, and separated from any line used to remove excavated materials. No person shall be lowered into a drilled pier excavation prior to casing the shaft through the overburden.

1.8.4.2 Ventilation

Each drilled pier excavation shall be provided with a ventilating device of sufficient capacity to assure a safe and healthy atmosphere before workmen and inspectors are permitted to enter the drilled pier excavation and during all work periods.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Concrete for Cast-In-Place Concrete Filled Piles, Steel Casings

Materials, mixing, and placing of concrete shall conform with the requirement of Section 03307A CONCRETE FOR MINOR STRUCTURES. Ready-mix plant equipment and facilities shall be certified in accordance with NRMCA QC 3.Minimum compressive strength at 28 days shall be 4,000 psi. Maximum coarse aggregate size shall be 1/4 inch.

2.1.2 Permanent Casings - Outer and Inner

Permanent casings shall be of steel of sufficient strength to prevent harmful distortions during driving, after completion of driving, and during driving of adjacent casings. Casings driven without the use of an internal mandrel shall have walls of a thickness sufficient to withstand the driving stresses. Casings shall be closed at the tip, except for steel pipe casings conforming to ASTM A 252 that may be open-end driven. Joints and tip connections shall be watertight. Nominal circumference at any cross-section in length shall be circular, whether or not modified by helical corrugations or flutings. Casings shall be left permanently in place as indicated on drawings.

2.1.2.1 Constant Section

Steel pipes, conforming to ASTM A 252, Grade 50, may be used in lieu of casings of constant section. Minimum nominal diameter and wall thickness shall be as indicated.

2.1.2.2 Combination Type

Combination type cast-in-place concrete piles, steel casing, will be as specified on the drawings. Specification requirements shall be in accordance with applicable paragraphs of this section.

2.1.3 Concrete Work for Drilled Foundation Caissons (Piers)

Concrete work shall be in accordance with requirements of Section 03307A CONCRETE FOR MINOR STRUCTURES, as modified herein:

2.1.3.1 Coarse Aggregate

Maximum size of coarse aggregate shall be 1/4".

2.1.3.2 Strength

Concrete strength shall be 4000 psi at 28 days. Slump shall be from 2 to 4 inches.

PART 3 EXECUTION

3.1 INSTALLATION OF CAST-IN-PLACE CONCRETE FILLED PILES, STEEL CASINGS

3.1.1 Driving Pile Casings

3.1.1.1 Driving Procedure

Excavation shall be stopped at 1 foot above foundation grade before casings are driven. When pile driving is completed, excavation shall be completed to lines and grades shown. Permanent pile casings shall be driven without interruption to the "calculated" tip elevation to reach a driving resistance in accordance with the schedule which the Government will prepare from the test-pile driving data. The pile hammer used for driving shall be the same type and operated at the same rate and in the same manner as that used for driving the test piles. Diesel powered hammers shall be operated at the rate recommended by the manufacturer throughout the entire driving period. Sufficient pressure shall be maintained at the steam hammer so that:

a. For a double-acting hammer, the number of blows per minute during and at the completion of driving of a pile is equal approximately to that at which the hammer is rated.

b. For a single-acting hammer, there is a full upward stroke of the ram.

c. For a differential-type hammer, there is a slight rise of the hammer base during each upward stroke.

A new pile cushion shall be used at the start of driving for each pile and the cushion shall be replaced whenever it has become highly compressed, charred, burned, or deteriorated in any manner during driving. The Contracting Officer shall be notified, and will determine what procedure shall be followed, if a pile reaches the "calculated" pile tip elevation without reaching the required driving resistance; or if the required driving resistance is reached before the "calculated" pile tip elevation. Casings will not be driven within a radius of 10 feet of any other casing in which the concrete has been placed for less than 2 days.

3.1.1.2 Tolerance in Driving

Casings shall be driven with a variation of not more than 0.25 inch per foot of pile length from the vertical. Butts shall be within 4 inches of the location indicated. Manipulation of casings to force them into position will not be permitted. Casings shall be checked by the Contractor for heave, after all piles are driven in a cluster or under any conditions of relatively close spacing; those found to have heaved shall be redriven to the required tip elevation. The center of gravity of each pile shall be maintained by templates or other approved means to conform to locations shown. Casings damaged, mislocated, or driven out of alignment shall be replaced or additional casings driven as directed.

3.1.2 Filling of Casings

Inner and outer casings shall be visually inspected by the Contractor after its final installation and prior to depositing the concrete and placing the reinforcement. The Contracting Officer shall be notified prior to each such inspection to allow for quality assurance inspections of all casings. The inspection will verify the integrity of the casing throughout its length and the absence of distortion and reduction in area. Concrete shall be deposited in the casing in a continuous operation by means of a funnel or hopper; after all mud, water and other extraneous material has been removed from its interior. If water cannot be removed effectively, the concrete will be placed by tremie techniques using a tremie tube that extends to the bottom of the inner casing. Subsequently, the tube will be repositioned to the bottom of the annular space between the inner and outer casings for filling. Vibration or rodding of the concrete will only be required to a depth of 5 feet below the top of the outer casing.

3.1.3 Cutting of Casings

Cutting of casings shall be with an acetylene torch or saw with prior approval by the Contracting Officer.

3.1.4 Welding

Shop and field welding, qualification of welders, and inspection of welds shall be in accordance with AWS D1.1.

3.1.5 Splicing

Splices may be used after review by the Contracting Officer. No more than two splices per full length of casing will be permitted. They shall be able to transmit any vertical and lateral forces adequately, and in addition, shall develop 100 percent of the flexural capacity of the ordinary pile casing cross section. Lateral joints shall be made with a continuous full penetration butt weld in accordance with AWS D1.1 or as approved by the Contracting Officer.

3.2 FIELD TESTS AND INSPECTIONS OF CAST-IN-PLACE CONCRETE FILLED PILES, STEEL CASINGS

3.2.1 Concrete Testing

During Concrete placement, strength tests will be made by a testing service provided and paid for by the Contractor in accordance with requirements of Section 03307A CONCRETE FOR MINOR STRUCTURES. At least two specimens shall be taken from each random batch and one test will be made for every each

pile with no less than two tests for any 1 day's operation.

3.3 PREPARATION OF DRILLED FOUNDATION CAISSONS (PIERS)

a. Caissons shall be excavated to established depths and dimensions shown. Bottoms of caissons shall be cleaned of loose or soft material and leveled. Excavated material shall be disposed of in accordance with Section 02300 EARTHWORK.

b. In drilling caissons, the surrounding soil and the earth walls shall be adequately and securely protected against cave-ins, displacement of the surrounding earth, and retention of ground water, by means of permanent steel casings. Casings shall have outside diameters not less than indicated on the drawings, shall be 3/4 inch thick, and shall not be removed if the structural integrity of the caisson will be impaired, as determined by the Contracting Officer.

c. Inner casing shall be drilled into rock, as shown on the drawings, first, then the outer casing shall be driven to rock or refusal prior to filling with concrete.

d. The outside diameter of permanent casing shall be the same as the nominal shaft diameter. Wall thickness of permanent casings shall be a minimum of 3/4 inches.

e. Water that flows into the excavations shall be continuously removed and all water shall be removed from the excavation bottom, to the extent possible, prior to concrete placement. The maximum permissible depth of water will be 2 inches. In the event of a severe water condition that makes it impossible or impractical to dewater the excavation, concrete shall be placed using underwater tremie after water movement has stabilized.

f. Each caisson excavation will be inspected and approved by the Contracting Officer prior to placing concrete. A record of all inspections, with related construction changes, shall be kept by the Contractor. The Contractor shall provide support personnel for inspection and testing procedures.

3.4 INSTALLATION OF DRILLED FOUNDATION CAISSONS (PIERS)

a. Concrete shall be continuously placed by methods that ensure against segregation and dislodging of excavation sidewalls, and shall completely fill the shaft. Concrete shall be placed by pumping or drop chutes in dry holes and by tremie or pumping in wet holes. The discharge shall be kept a minimum of 3 feet below the fresh concrete surface during placement. Drilling of caissons or driving of casings shall not be within 10 feet of concrete placed within the last 2 days.

b. Concrete shall be brought to a true level surface inside the shaft and a full width cross key formed, or dowels installed, should it become necessary to interrupt placing concrete in any caisson. Prior to placing additional concrete, surfaces shall be cleaned of laitance and slush with one-to-one Portland cement grout. The grout shall have a water-cement ratio not exceeding that of the concrete.

c. Concrete in dry batter caissons shall be placed with a drop chute extending within 3 feet of the concrete surface in the excavation.

d. Concrete shall be vibrated for full height of caisson.

3.4.1 Tolerances

a. Any caisson out of center or plumb beyond the tolerance specified shall be corrected by redriving and/or redrilling and the Contractor shall bear any cost of correction. Misaligned inner casings shall be replaced with a slightly larger diameter casing and redrilled into place.

b. Cross sections of shafts and bells shall not be less than design dimensions.

c. Caissons shall be installed with top location deviating a maximum of 3 inches from centerline locations.

d. Vertical caissons shall be installed plumb within a maximum of 1-1/2 inches for the first 10 feet and within l/2 inch for each 10 feet of additional depth.

3.4.2 Proof Test Hole Requirements

Rock Soundness test shall conform to the following:

a. After excavation, the rock below each caisson bearing level shall be proof tested for soundness by percussion or rotary core drilling one hole in each caisson in locations indicated.

3.4.3 Protection

Protection shall be provided around top of the excavation to prevent debris from being dislodged into the excavation and concrete.

-- End of Section --

SECTION 02464A

METAL SHEET PILING
05/92

PAYMENT ITEM NO. 006 AZ-13 SHEET PILES INCLUDING SHEET PILE CONNECTORS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 6/A 6M	(2000) General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
ASTM A 690/A 690M	(1994) High-Strength Low-Alloy Steel H-Piles and Sheet Piling for Use in Marine Environments

1.2 UNIT PRICES

1.2.1 Steel Sheet Piling, Type A690, Grade 50

1.2.1.1 Payment

Payment for sheet piling quantities will be made at the applicable contract price per square foot for furnished and installed sheet piling including sheet pile connectors. Payment shall cover all cost of furnishing, handling, storing and installing piling including placing, driving, cutting holes and other materials and work incident thereto.

1.2.1.2 Measurement

The length of sheet piling installed will be measured to the nearest square foot. For installed pilings directed to be cut off before reaching the penetration depth shown, the portion cut off will be measured for payment as the difference between the total length of piling shown on the plans for that location and the length of piling installed below the point of cut-off. No measurement will be made for the sheet pile connectors.

1.2.1.3 Unit of Measure

Unit of measure: square foot.

1.2.2 Cut-Offs

1.2.2.1 Payment

When pilings which have not been driven to penetration depths shown are directed to be cut off except for cut-offs due to excessive battering, a

lump sum payment will be made for cutting off each piling.

1.2.2.2 Measurement

An additional sum will be paid for each square foot of the portion cut off and measured for payment. For installed pilings directed to be cut off before reaching the penetration depth shown, the portion cut off will be measured for payment as the difference between the total length of piling shown on the plans for that location and the length of piling installed below the point of cut-off at the rate of 50 percent of the applicable contract unit price.

1.2.2.3 Unit of Measure

Unit of measure: each.

1.2.3 Splices

1.2.3.1 Payment

Payment will be made for each piling spliced at the direction of the Contracting Officer to drive the piling to a depth greater than shown and extend it up to the required top elevation. An additional sum will be paid for each linear foot of the piling extension at the applicable contract unit price.

1.2.3.2 Measurement

Splices will be measured for payment for each piling spliced.

1.2.3.3 Unit of Measure

Unit of measure: each.

1.2.4 Pulled Pilings

1.2.4.1 Payment

The Contractor furnished pilings which have been installed and are pulled at the direction of the Contracting Officer and found to be in good condition will be paid for at the applicable contract unit price for furnishing and installing the pilings in their initial position plus an equal amount for the cost of pulling.

1.2.4.2 Measurement

When such pulled pilings are redriven, an additional amount equal to 50 percent of the applicable contract unit price for furnishing and driving the pilings will be paid for redriving the pilings. This additional price constitutes payment for redriving only. The cost of furnishing, initial driving, and pulling the pilings is to be paid for as specified.

a. Government furnished pilings which are pulled at the direction of the Contracting Officer and found to be in good condition will be paid for at the applicable contract unit price for installing the pilings in their initial position plus an equal amount for the cost of pulling. Such piling when redriven will be paid for at the applicable contract unit cost for installing the pilings.

b. When pilings are pulled and found to be damaged no payment will be made for the initial furnishing and driving or for the pulling of such pilings. Pilings replacing damaged pilings will be paid for at the applicable contract unit prices.

1.2.4.3 Unit of Measure

Unit of measure: each.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Metal Sheet Piling; G, E

Detail drawings for sheet piling including fabricated sections shall show complete piling dimensions and details, driving sequence and location of installed piling. Detail drawings shall include details and dimensions of templates and other temporary guide structures for installing piling. Detail drawings shall provide details of the method of handling piling to prevent permanent deflection, distortion or damage to piling interlocks.

Driving; G, E

Records of the sheet piling driving operations shall be submitted after driving is completed. These records shall provide a system of identification which shows the disposition of approved piling in the work, driving equipment performance data, piling penetration rate data, piling dimensions and top and bottom elevations of installed piling.

SD-03 Product Data

Pile Driving Equipment; G, E

Complete descriptions of sheet piling driving equipment including hammers, extractors, protection caps and other installation appurtenances shall be submitted for approval prior to commencement of work.

Pulling and Redriving; G, A

The proposed method of pulling sheet piling shall be submitted and approved prior to pulling any piling.

Interlocked Joint Strength in Tension Test; G, E

The procedure for testing sheet piling interlocked joint strength in tension shall be submitted and approved prior to testing piling.

SD-06 Test Reports

Materials Tests; G, E

Certified materials tests reports showing that sheet piling and appurtenant metal materials meet the specified requirements shall be submitted for each shipment and identified with specific lots prior to installing materials. Material test reports shall meet the requirements of ASTM A 6/A 6M.

1.4 DELIVERY, STORAGE AND HANDLING

Materials delivered to the site shall be new and undamaged and shall be accompanied by certified test reports. The manufacturer's logo and mill identification mark shall be provided on the sheet piling as required by the referenced specifications. Sheet piling shall be stored and handled in the manner recommended by the manufacturer to prevent permanent deflection, distortion or damage to the interlocks. Storage of sheet piling should also facilitate required inspection activities.

PART 2 PRODUCTS

2.1 METAL SHEET PILING

Metal sheet piling shall be hot-rolled steel sections conforming to ASTM A 690/A 690M. The interlocks of sheet piling shall be free-sliding, provide a swing angle suitable for the intended installation but not less than 5 degrees when interlocked, and maintain continuous interlocking when installed. Sheet piling and connector sheet piling shall be full-length sections of the dimensions shown. Sheet piling shall be provided with standard pulling holes. Metalwork fabrication for sheet piling shall be as specified and in Section 05502A METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS.

2.2 APPURTENANT METAL MATERIALS

Metal plates, connector sheet piles, shapes, bolts, nuts, rivets and other appurtenant fabrication and installation materials shall conform to manufacturer's standards and to the requirements specified in the respective sheet piling standards and in Section 05502A MISCELLANEOUS METAL MATERIALS, STANDARD ARTICLES, AND SHOP FABRICATED ITEMS and 05120 STRUCTURAL STEEL and Section 05120 STRUCTURAL STEEL.

2.3 TESTS, INSPECTIONS, AND VERIFICATIONS

Requirements for material tests, workmanship and other measures for quality assurance shall be as specified and in Section 05055 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

2.3.1 Materials Tests

Materials tests shall conform to the following requirements. Sheet piling and appurtenant materials shall be tested and certified by the manufacturer to meet the specified chemical, mechanical and section property requirements prior to delivery to the site. Testing of sheet piling for mechanical properties shall be performed after the completion of all rolling and forming operations. Testing of sheet piling shall meet the requirements of ASTM A 6/A 6M.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Pile Driving Equipment

Pile driving equipment shall conform to the following requirements.

3.1.1.1 Driving Hammers

Hammers shall be steam, air, or diesel drop, single-acting, double-acting, differential-acting, or vibratory type. The driving energy of the hammers shall be as recommended by the manufacturer for the piling weights and subsurface materials to be encountered.

3.1.2 Placing and Driving

3.1.2.1 Placing

Any excavation required within the area where sheet pilings are to be installed including boulders or riprap shall be completed prior to final placement of sheet pilings. Pilings shall be carefully located as shown or directed. Pilings shall be placed plumb with out-of-plumbness not exceeding 1/8 inch per foot of length and true to line. Temporary wales, templates or guide structures shall be provided to insure that the pilings are placed and driven to the correct alignment. At least two templates shall be used in placing each piling and the maximum spacing of templates shall not exceed 20 feet. Pilings properly placed and driven shall be interlocked throughout their length with adjacent pilings to form a continuous diaphragm throughout the length or run of piling wall.

3.1.2.2 Driving

Prior to driving pilings in water a horizontal line shall be painted on both sides of each piling at a fixed distance from the bottom so that it shall be visible above the water line after installation. This line shall indicate the profile of the bottom elevation of installed pilings and potential problem areas can be identified by abrupt changes in its elevations. Pilings shall be driven with the proper size hammer and by approved methods so as not to subject the pilings to damage and to ensure proper interlocking throughout their lengths. Driving hammers shall be maintained in proper alignment during driving operations by use of leads or guides attached to the hammer. Caution shall be taken in the sustained use of vibratory hammers when a hard driving condition is encountered to avoid interlock-melt or damages. The use of vibratory hammers should be discontinued and impact hammers employed when the penetration rate due to vibratory loading is one foot or less per minute. A protecting cap shall be employed in driving when using impact hammers to prevent damage to the tops of pilings. Pilings damaged during driving or driven out of interlock shall be removed and replaced at the Contractor's expense. Pilings shall be driven without the aid of a water jet. Adequate precautions shall be taken to insure that pilings are driven plumb. If at any time the forward or leading edge of the piling wall is found to be out-of-plumb in the plane of the wall the piling being driven shall be driven to the required depth and tapered pilings shall be provided and driven to interlock with the out-of-plumb leading edge or other approved corrective measures shall be taken to insure the plumbness of succeeding pilings. The maximum permissible taper for any tapered piling shall be 1/8 inch per foot of length. Pilings in each run or continuous length of piling wall shall be driven alternately in increments of depth to the required depth or

elevation. No piling shall be driven to a lower elevation than those behind it in the same run except when the pilings behind it cannot be driven deeper. If the piling next to the one being driven tends to follow below final elevation it may be pinned to the next adjacent piling. If obstructions restrict driving a piling to the specified penetration the obstructions shall be removed or penetrated with a chisel beam. If the Contractor demonstrates that removal or penetration is impractical the Contractor shall make changes in the design alignment of the piling structure as directed to insure the adequacy and stability of the structure. Pilings shall be driven to depths shown and shall extend up to the elevation indicated for the top of pilings. Piling driven to rock shall be seated individually on the rock.

3.1.3 Cutting-Off and Splicing

Pilings driven to refusal or to the point where additional penetration cannot be attained and are extending above the required top elevation in excess of the specified tolerance shall be cut off to the required elevation. Pilings driven below the required top elevation and pilings damaged by driving and cut off to permit further driving shall be extended as required to reach the top elevation by splicing when directed at no additional cost to the Government. If directed pilings shall be spliced as required to drive them to depths greater than shown and extend them up to the required top elevation. Pilings adjoining spliced pilings shall be full length unless otherwise approved. If splices are allowed in adjoining pilings the splices must be spaced at least 3 feet apart in elevation. Ends of pilings to be spliced shall be squared before splicing to eliminate dips or camber. Pilings shall be spliced together with concentric alignment of the interlocks so that there are no discontinuities, dips or camber at the abutting interlocks. Spliced pilings shall be free sliding and able to obtain the maximum swing with contiguous pilings. The tops of pilings excessively battered during driving shall be trimmed when directed at no cost to the Government. Piling cut-offs shall become the property of the Contractor and shall be removed from the site. The Contractor shall cut holes in pilings for bolts, rods, drains or utilities as shown or as directed. All cutting shall be done in a neat and workmanlike manner. A straight edge shall be used in cuts made by burning to avoid abrupt nicks. Bolt holes in steel piling shall be drilled or may be burned and reamed by approved methods which will not damage the surrounding metal. Holes other than bolt holes shall be reasonably smooth and the proper size for rods and other items to be inserted.

3.1.4 Inspection of Driven Piling

The Contractor shall inspect the interlocked joints of driven pilings extending above ground. Pilings found to be out of interlock shall be removed and replaced at the Contractor's expense.

3.1.5 Pulling and Redriving

In the pulling and redriving of piles as directed, the Contractor shall pull selected pilings after driving to determine the condition of the underground portions of pilings. Any piling so pulled and found to be damaged to the extent that its usefulness in the structure is impaired shall be removed and replaced at the Contractor's expense. Pilings pulled and found to be in satisfactory condition shall be redriven when directed.

3.2 QUANTITIES

The estimated quantities of sheet piling listed in the unit price schedule of the contract as to be furnished by the Contractor are given for bidding purposes only. Sheet piling quantities for payment shall consist of the square feet of piling acceptably installed. Installed quantities shall consist of all piling driven between the required top and bottom elevations of pilings plus any additions thereto resulting from changes in design or alignment as provided in paragraph DRIVING.

-- End of Section --

SECTION 03307A

CONCRETE FOR MINOR STRUCTURES
11/01

PAYMENT ITEM NO. 0007 CONCRETE ENCASEMENT
PAYMENT ITEN NO. 0013 EPOXY-COATED REINFORCED STEEL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ACI INTERNATIONAL (ACI)

ACI 308	(1992; R 1997) Standard Practice for Curing Concrete
ACI 318/318R	(1999) Building Code Requirements for Structural Concrete and Commentary
ACI 318M	(1995) Metric Building Code Requirements for Structural Concrete and Commentary
ACI 347R	(1994; R 1999) Guide to Formwork for Concrete

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 185	(1997) Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
ASTM A 615/A 615M	(2000) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 775/A 775M	(1997el) Epoxy-Coated Reinforcement Steel Bars
ASTM A 884/A 884M	(1996ael) Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement
ASTM C 143/C 143M	(2000) Slump of Hydraulic Cement Concrete
ASTM C 150	(1999a) Portland Cement
ASTM C 171	(1997a) Sheet Materials for Curing Concrete
ASTM C 172	(1999) Sampling Freshly Mixed Concrete
ASTM C 231	(1997el) Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 260	(2000) Air-Entraining Admixtures for

	Concrete
ASTM C 309	(1998a) Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 31/C 31M	(2000e1) Making and Curing Concrete Test Specimens in the Field
ASTM C 33	(1999ae1) Concrete Aggregates
ASTM C 39/C 39M	(2001) Compressive Strength of Cylindrical Concrete Specimens
ASTM C 494/C 494M	(1999ae1) Chemical Admixtures for Concrete
ASTM C 595	(2000a) Blended Hydraulic Cements
ASTM C 595M	(1997) Blended Hydraulic Cements (Metric)
ASTM C 618	(2000) Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
ASTM C 685	(2000) Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C 920	(1998) Elastomeric Joint Sealants
ASTM C 94/C 94M	(2000e2) Ready-Mixed Concrete
ASTM D 1752	(1984; R 1996el) Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
ASTM D 75	(1987; R 1997) Sampling Aggregates
ASTM D 98	(1998) Calcium Chloride
ASTM E 96	(2000) Water Vapor Transmission of Materials

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 400	(1963) Requirements for Water for Use in Mixing or Curing Concrete
COE CRD-C 572	(1974) Corps of Engineers Specifications for Polyvinylchloride Waterstop

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Air-Entraining Admixture; G, E
Accelerating Admixture; G, E
Water-Reducing or Retarding Admixture; G, E
Curing Materials; G, E
Reinforcing Steel; G, E
Expansion Joint Filler Strips, Premolded; G, E
Joint Sealants - Field Molded Sealants; G, E
Waterstops; G, E

Manufacturer's literature is available from suppliers which demonstrates compliance with applicable specifications for the above materials.

Conveying and Placing Concrete; G, E

The methods and equipment for transporting, handling, depositing, and consolidating the concrete shall be submitted prior to the first concrete placement.

Formwork; G, E

Formwork design shall be submitted prior to the first concrete placement.

SD-06 Test Reports

Aggregates; G, E

Aggregates will be accepted on the basis of certificates of compliance and test reports that show the material(s) meets the quality and grading requirements of the specifications under which it is furnished.

Concrete Mixture Proportions; G, E

Ten days prior to placement of concrete, the contractor shall submit the mixture proportions that will produce concrete of the quality required. Applicable test reports shall be submitted to verify that the concrete mixture proportions selected will produce concrete of the quality specified.

SD-07 Certificates

Cementitious Materials; G, E

Certificates of compliance attesting that the concrete materials meet the requirements of the specifications shall be submitted in accordance with the Special Clause "CERTIFICATES OF COMPLIANCE". Cementitious material will be accepted on the basis of a manufacturer's certificate of compliance, accompanied by mill test reports that the material(s) meet the requirements of the specification under which it is furnished.

Aggregates; G, E

Aggregates will be accepted on the basis of certificates of compliance and tests reports that show the material(s) meet the quality and grading requirements of the specifications under which it is furnished.

1.3 UNIT PRICES

1.3.1 Concrete

1.3.1.1 Payment

All costs associated with furnishing, delivering, placing, finishing, and curing of concrete for the various items of the schedule, which price shall include the cost of all formwork. Payment for grout, preformed expansion joints, field-molded sealants, and waterstops is to be included in this unit price payment item. Epoxy-coated reinforcing steel bars are included in a separate unit price payment item.

1.3.1.2 Measurement

Concrete will be measured for payment on the basis of the actual volume of concrete within the pay lines of the structures as indicated. Measurement of concrete placed against the sides of any excavation without the use of intervening forms will be made only within the pay lines of the structure. No deductions will be made for rounded or beveled edge, for space occupied by meal work, for electrical conduits or timber, or for voids or embedded items that are either less than 5 cubic feet in volume or 1 square foot in cross section.

1.3.1.3 Unit of Measure

Unit of measure: cubic yard.

1.4 DESIGN AND PERFORMANCE REQUIREMENTS

The Government will maintain the option to sample and test joint sealer, joint filler material, waterstop, aggregates and concrete to determine compliance with the specifications. The Contractor shall provide facilities and labor as may be necessary to assist the Government in procurement of representative test samples. Samples of aggregates will be obtained at the point of batching in accordance with ASTM D 75. Concrete will be sampled in accordance with ASTM C 172. Slump and air content will be determined in accordance with ASTM C 143/C 143M and ASTM C 231, respectively, when cylinders are molded. Compression test specimens will be made, cured, and transported in accordance with ASTM C 31/C 31M. Compression test specimens will be tested in accordance with ASTM C 39/C 39M. Samples for strength tests will be taken not less than once each shift in which concrete is produced. A minimum of three specimens will be made from each sample; two will be tested at 28 days (90 days if pozzolan is used) for acceptance, and one will be tested at 7 days for information.

1.4.1 Strength

Acceptance test results will be the average strengths of two specimens tested at 28 days (90 days if pozzolan is used). The strength of the concrete will be considered satisfactory so long as the average of three consecutive acceptance test results equal or exceed the specified compressive strength, f'c, and no individual acceptance test result falls below f'c by more than 500 psi.

1.4.2 Construction Tolerances

A Class "C" finish shall apply to all surfaces except those specified to

receive a Class "D" finish. A Class "D" finish shall apply to all surfaces which will be permanently concealed after construction. The surface requirements for the classes of finish required shall be as specified in ACI 347R.

1.4.3 Concrete Mixture Proportions

Concrete mixture proportions shall be the responsibility of the Contractor. Mixture proportions shall include the dry weights of cementitious material(s); the nominal maximum size of the coarse aggregate; the specific gravities, absorptions, and saturated surface-dry weights of fine and coarse aggregates; the quantities, types, and names of admixtures; and quantity of water per cubic yard of concrete. All materials included in the mixture proportions shall be of the same type and from the same source as will be used on the project. Specified compressive strength f'c shall be 4,000 psi at 28 days (90 days if pozzolan is used). The maximum nominal size coarse aggregate shall be 3/4 inch. The air content shall be between 5 and 7 percent. The slump shall be between 2 and 4 inches. The maximum water cement ratio shall be 0.50.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Cementitious Materials

Cementitious materials shall conform to the appropriate specifications listed:

2.1.1.1 Portland Cement

ASTM C 150, Type II, low alkali.

2.1.1.2 Pozzolan

Pozzolan shall conform to ASTM C 618, Class C or F, including requirements of Tables 1A and 2A.

2.1.2 Aggregates

Aggregates shall meet the quality and grading requirements of ASTM C 33 Class Designations 4M or better.

2.1.3 Admixtures

Admixtures to be used, when required or approved, shall comply with the appropriate specification listed. Chemical admixtures that have been in storage at the project site for longer than 6 months or that have been subjected to freezing shall be retested at the expense of the contractor at the request of the Contracting Officer and shall be rejected if test results are not satisfactory.

2.1.3.1 Air-Entraining Admixture

Air-entraining admixture shall meet the requirements of ASTM C 260.

2.1.4 Water

Water for mixing and curing shall be fresh, clean, potable, and free from

injurious amounts of oil, acid, salt, or alkali.

2.1.5 Reinforcing Steel

Epoxy-coated reinforcing steel bar shall conform to the requirements of ASTM A 615/A 615M and ASTM A 884/A 884M, Grade 60. Welded steel wire fabric shall conform to the requirements of ASTM A 185. Details of reinforcement not shown shall be in accordance with ACI 318/318R, Chapters 7 and 12.

2.1.6 Expansion Joint Filler Strips, Premolded

Expansion joint filler strips, premolded shall be sponge rubber conforming to ASTM D 1752, Type I.

2.1.7 Joint Sealants - Field Molded Sealants

Joint sealants - field molded sealants shall conform to ASTM C 920, Type M, Grade NS, Class 25, use NT for vertical joints and Type M, Grade P, Class 25, use T for horizontal joints. Bond-breaker material shall be polyethylene tape, coated paper, metal foil, or similar type materials. The backup material shall be compressible, nonshrink, nonreactive with the sealant, and a nonabsorptive material such as extruded butyl or polychloroprene foam rubber. Immediately prior to installation of field-molded sealants, the joint shall be cleaned of all debris and further cleaned using water, chemical solvents, or other means as recommended by the sealant manufacturer or directed.

2.1.8 Waterstops]

Waterstops shall conform to COE CRD-C 572.

2.1.9 Formwork

The design and engineering of the formwork as well as its construction, shall be the responsibility of the Contractor.

2.1.10 Form Coatings

Forms for exposed surfaces shall be coated with a nonstaining form oil, which shall be applied shortly before concrete is placed.

2.1.11 Curing Materials

Curing materials shall conform to the following requirements.

2.1.11.1 Impervious Sheet Materials

Impervious sheet materials, ASTM C 171, type optional, except polyethylene film, if used, shall be white opaque.

2.1.11.2 Membrane-Forming Curing Compound

ASTM C 309, Type 1-D or 2, Class A.

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 General

Construction joints shall be prepared to expose coarse aggregate, and the surface shall be clean, damp, and free of laitance. Ramps and walkways, as necessary, shall be constructed to allow safe and expeditious access for concrete and workmen. Snow, ice, standing or flowing water, loose particles, debris, and foreign matter shall have been removed. Earth foundations shall be satisfactorily compacted. Spare vibrators shall be available. The entire preparation shall be accepted by the Government prior to placing.

3.1.2 Embedded Items

Reinforcement shall be secured in place; joints, anchors, and other embedded items shall have been positioned. Internal ties shall be arranged so that when the forms are removed the metal part of the tie will be not less than 2 inches from concrete surfaces permanently exposed to view or exposed to water on the finished structures. Embedded items shall be free of oil and other foreign matters such as loose coatings or rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. All equipment needed to place, consolidate, protect, and cure the concrete shall be at the placement site and in good operating condition.

3.1.3 Formwork Installation

Forms shall be properly aligned, adequately supported, and mortar-tight. The form surfaces shall be smooth and free from irregularities, dents, sags, or holes when used for permanently exposed faces. All exposed joints and edges shall be chamfered, unless otherwise indicated.

3.1.4 Production of Concrete

3.1.4.1 Ready-Mixed Concrete

Ready-mixed concrete shall conform to ASTM C 94/C 94M except as otherwise specified.

3.1.4.2 Concrete Made by Volumetric Batching and Continuous Mixing

Concrete made by volumetric batching and continuous mixing shall conform to ASTM C 685.

3.1.4.3 Batching and Mixing Equipment

The contractor shall have the option of using an on-site batching and mixing facility. The facility shall provide sufficient batching and mixing equipment capacity to prevent cold joints. The method of measuring materials, batching operation, and mixer shall be submitted for review.

3.1.5 Waterstops

Waterstops shall be installed and spliced as directed by the manufacturer.

3.2 CONVEYING AND PLACING CONCRETE

Conveying and placing concrete shall conform to the following requirements.

3.2.1 General

Concrete placement shall not be permitted when weather conditions prevent proper placement and consolidation without approval. When concrete is mixed and/or transported by a truck mixer, the concrete shall be delivered to the site of the work and discharge shall be completed within 1-1/2 hours or 45 minutes when the placing temperature is 85 degrees F or greater. Concrete shall be conveyed from the mixer to the forms as rapidly as practicable by methods which prevent segregation or loss of ingredients. Concrete shall be in place and consolidated within 15 minutes after discharge from the mixer. Concrete shall be deposited as close as possible to its final position in the forms and be so regulated that it may be effectively consolidated in horizontal layers 18 inches or less in thickness with a minimum of lateral movement. The placement shall be carried on at such a rate that the formation of cold joints will be prevented.

3.2.2 Consolidation

Each layer of concrete shall be consolidated by rodding, spading, or internal vibrating equipment. External vibrating equipment may be used when authorized. Internal vibration shall be systematically accomplished by inserting the vibrator through the fresh concrete in the layer below at a uniform spacing over the entire area of placement. The distance between insertions shall be approximately 1.5 times the radius of action of the vibrator and overlay the adjacent, just-vibrated area by approximately a few inches. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the layer below, if such a layer exists. It shall be held stationary until the concrete is consolidated and then withdrawn slowly at the rate of about 3 inches per second.

3.2.3 Cold-Weather Requirements

No concrete placement shall be made when the ambient temperature is below 35 degrees F or if the ambient temperature is below 40 degrees F and falling. Suitable covering and other means as approved shall be provided for maintaining the concrete at a temperature of at least 50 degrees F for not less than 72 hours after placing and at a temperature above freezing for the remainder of the curing period. Salt, chemicals, or other foreign materials shall not be mixed with the concrete to prevent freezing. Any concrete damaged by freezing shall be removed and replaced at the expense of the contractor.

3.2.4 Hot-Weather Requirements

When the rate of evaporation of surface moisture, as determined by use of Figure 1 of ACI 308, is expected to exceed 0.2 pound per square foot per hour, provisions for windbreaks, shading, fog spraying, or covering with a light-colored material shall be made in advance of placement, and such protective measures shall be taken as quickly as finishing operations will allow.

3.3 FORM REMOVAL

Forms shall not be removed before the expiration of 24 hours after concrete placement except where otherwise specifically authorized. Supporting forms and shoring shall not be removed until the concrete has cured for at least 5 days. When conditions on the work are such as to justify the requirement, forms will be required to remain in place for longer periods.

3.4 FINISHING

3.4.1 General

No finishing or repair will be done when either the concrete or the ambient temperature is below 50 degrees F.

3.4.2 Finishing Formed Surfaces

All fins and loose materials shall be removed, and surface defects including tie holes shall be filled. All honeycomb areas and other defects shall be repaired. All unsound concrete shall be removed from areas to be repaired. Surface defects greater than 1/2 inch in diameter and holes left by removal of tie rods in all surfaces not to receive additional concrete shall be reamed or chipped and filled with dry-pack mortar. The prepared area shall be brush-coated with an approved epoxy resin or latex bonding compound or with a neat cement grout after dampening and filled with mortar or concrete. The cement used in mortar or concrete for repairs to all surfaces permanently exposed to view shall be a blend of portland cement and white cement so that the final color when cured will be the same as adjacent concrete.

3.4.3 Finishing Unformed Surfaces

All unformed surfaces that are not to be covered by additional concrete or backfill shall be float finished to elevations shown, unless otherwise specified. Surfaces to receive additional concrete or backfill shall be brought to the elevations shown and left as a true and regular surface. Exterior surfaces shall be sloped for drainage unless otherwise shown. Joints shall be carefully made with a jointing tool. Unformed surfaces shall be finished to a tolerance of 3/8 inch for a float finish as determined by a 10 foot straightedge placed on surfaces shown on the plans to be level or having a constant slope. Finishing shall not be performed while there is excess moisture or bleeding water on the surface. No water or cement shall be added to the surface during finishing.

3.4.3.1 Float Finish

Surfaces to be float finished shall be screeded and darbied or bullfloated to eliminate the ridges and to fill in the voids left by the screed. In addition, the darby or bullfloat shall fill all surface voids and only slightly embed the coarse aggregate below the surface of the fresh concrete. When the water sheen disappears and the concrete will support a person's weight without deep imprint, floating should be completed. Floating should embed large aggregates just beneath the surface, remove slight imperfections, humps, and voids to produce a plane surface, compact the concrete, and consolidate mortar at the surface.

3.4.3.2 Expansion and Contraction Joints

Expansion and contraction joints shall be made in accordance with the details shown or as otherwise specified.

3.5 CURING AND PROTECTION

Beginning immediately after placement and continuing for at least 7 days, all concrete shall be cured and protected from premature drying, extremes in temperature, rapid temperature change, freezing, mechanical damage, and exposure to rain or flowing water. All materials and equipment needed for

adequate curing and protection shall be available and at the site of the placement prior to the start of concrete placement. Preservation of moisture for concrete surfaces not in contact with forms shall be accomplished by one of the following methods:

a. Continuous sprinkling or ponding.

b. Application of absorptive mats or fabrics kept continuously wet.

c. Application of sand kept continuously wet.

d. Application of impervious sheet material conforming to ASTM C 171.

e. Application of membrane-forming curing compound conforming to ASTM C 309, Type 1-D, on surfaces permanently exposed to view and Type 2 on other surfaces shall be accomplished in accordance with manufacturer's instructions.

The preservation of moisture for concrete surfaces placed against wooden forms shall be accomplished by keeping the forms continuously wet for 7 days. If forms are removed prior to end of the required curing period, other curing methods shall be used for the balance of the curing period. During the period of protection removal, the temperature of the air in contact with the concrete shall not be allowed to drop more than 25 degrees F within a 24 hour period.

3.6 TESTS AND INSPECTIONS

3.6.1 General

The individuals who sample and test concrete as required in this specification shall have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I.

3.6.2 Inspection Details and Frequency of Testing

3.6.2.1 Preparations for Placing

Foundation or construction joints, forms, and embedded items shall be inspected in sufficient time prior to each concrete placement by the Contractor to certify that it is ready to receive concrete.

3.6.2.2 Air Content

Air content shall be checked at least twice during each shift that concrete is placed. Samples shall be obtained in accordance with ASTM C 172 and tested in accordance with ASTM C 231.

3.6.2.3 Slump

Slump shall be checked twice during each shift that concrete is produced. Samples shall be obtained in accordance with ASTM C 172 and tested in accordance with ASTM C 143/C 143M.

3.6.2.4 Consolidation and Protection

The Contractor shall ensure that the concrete is properly consolidated, finished, protected, and cured.

3.6.3 Action Required

3.6.3.1 Placing

The placing foreman shall not permit placing to begin until he has verified that an adequate number of acceptable vibrators, which are in working order and have competent operators, are available. Placing shall not be continued if any pile is inadequately consolidated.

3.6.3.2 Air Content

Whenever a test result is outside the specification limits, the concrete shall not be delivered to the forms and an adjustment shall be made to the dosage of the air-entrainment admixture.

3.6.3.3 Slump

Whenever a test result is outside the specification limits, the concrete shall not be delivered to the forms and an adjustment should be made in the batch weights of water and fine aggregate. The adjustments are to be made so that the water-cement ratio does not exceed that specified in the submitted concrete mixture proportion.

3.6.4 Reports

The results of all tests and inspections conducted at the project site shall be reported informally at the end of each shift and in writing weekly and shall be delivered within 3 days after the end of each weekly reporting period. See Section 01451 CONTRACTOR QUALITY CONTROL.

-- End of Section --

SECTION 05055A

MISCELLANEOUS STEEL, STRUCTURAL STEEL, STANDARD ARTICLES, SHOP-FABRICATED ITEMS, METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS
12/92

PAYMENT ITEM NO. 0018 STEEL WALER BEAMS
PAYMENT ITEM NO. 0019 MISCELLANEOUS STEEL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC FCD	(1995a) Quality Certification Progress Description
AISC 810	(1989) Erection Bracing of Low-Rise Structural Steel Frames
AISC 316	(1989) ASD Manual of Steel Construction
AISC 317	(1992; Errata 1994) Connections
AISC 325	LRFD Manual of Steel Construction
AISC 326	(1983) Detailing for Steel Construction
AISC 348	(1985) Allowable Stress Design Specifications for Structural Joints Using ASTM A325 or A490 Bolts
AISC 349	(1988) Load and Resistance Factor Design Specifications for Structural Joints Using ASTM A325 or A490 Bolts
AISC 335	(1989) Structural Steel Buildings Allowable Stress Design and Plastic Design
AISC S340	(1992) Metric Properties of Structural Shapes with Dimensions According to ASTM A6M
AISC CSM8901	(2000) Load and Resistance Factor Design Specifications for Hollow Structural Sections (HSS)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36/A 36M	(1996) Carbon Structural Steel
ASTM A 325	(1994) Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 325M	(1993) High-Strength Bolts for Structural Steel Joints (Metric)
ASTM A 490	(1993) Heat-Treated Steel Structural Bolts, 150 ksi Minimum Tensile Strength
ASTM A 490M	(1993) High-Strength Steel Bolts, Classes 10.9 and 10.9.3, for Structural Steel Joints (Metric)
ASTM A 514/A 514M	(1994a) High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding
ASTM A 572/A 572M	(1994c) High-Strength Low-Alloy Columbium-Vanadium Structural Steel
ASTM A 588/A 588M	(1994) High-Strength Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point to 4 in. (100 mm) Thick
ASTM A 992/A 992M	(1998el) Steel for Structural Shapes for Use in Building Framing
ASTM D 962	(1981; R 1994) Aluminum Powder and Paste Pigments for Paints
ASTM F 436	(1993) Hardened Steel Washers
ASTM F 436M	(1993) Hardened Steel Washers (Metric)
ASTM F 844	(1998) Washers, Steel, Plain (Flat), Unhardened for General Use

ASME INTERNATIONAL (ASME)

ASME B18.2.1	(1981; Supple 1991; R 1992) Square and Hex Bolts and Screws (Inch Series)
ASME B18.2.2	(1987; R 1993) Square and Hex Huts (Inch Series)
ASME B18.6.1	(1981; R 1991) Wood Screws (Inch Series)
ASME B18.6.2	(1972; R 1993) Slotted Head Cap Screws, Square Head Set Screws, and Slotted Headless Set Screws
ASME B18.6.3	(1972; R 1991) Machine Screws and Machine Screw Nuts
ASME B18.21.1	(1994) Lock Washers (Inch Series)

ASME B18.22.1	(1965; R 1990) Plain Washers
ASME B18.22M	(1981; R 1990) Metric Plain Washers
ASME B27.7	(1977; R 1993) General Purpose Tapered and Reduced Cross Section Retaining Rings

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1	(1994) Structural Welding Code - Steel

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

1.2 UNIT PRICES

1.2.1 Metalwork Fabrication, Machine Work, Miscellaneous Provisions

1.2.1.1 Payment

Payment shall constitute full compensation for furnishing all plant, labor, materials and equipment and performing all operations necessary for the metalwork fabrication, machine work, miscellaneous provisions as specified.

1.2.1.2 Unit of Measure

Unit of measure: lump sum.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Fabricated Metal Items; G, E

Detail drawings for metalwork and machine work shall be submitted and approved prior to fabrication.

SD-03 Product Data

Miscellaneous Metals and Standard Metal Articles; G, E
Shop Fabricated Metal Items; G, E

Lists of materials shall be submitted for approval as specified. Schedules of welding procedures for steel structures shall be submitted and approved prior to commencing fabrication.

Records which identify the disposition of approved material and fabricated items in the work must be submitted for approval as specified.

Structural Steel Welding Repairs; G, E

Welding repair plans for steel shall be submitted and approved prior to making repairs.

Materials Orders; G, A

Copies of purchase orders, mill orders, shop orders and work orders for materials shall be submitted prior to the use of the materials in the work.

Materials List; G, E

Materials list for fabricated items shall be submitted at the time of submittal of detail drawings.

Shipping Bill; G, A

Shipping bill shall be submitted with the delivery of finished pieces to the site.

SD-04 Samples

Miscellaneous Metals and Standard Metal Articles; G, E
Shop Fabricated Metal Items; G, E

Samples shall be submitted for approval as specified. Samples of standard or fabricated items shall be full size and complete as required for installation in the work, and may be installed in the work, provided each sample is clearly identified and its location recorded.

SD-06 Test Reports

Miscellaneous Metals and Standard Metal Articles; G, E
Shop Fabricated Metal Items; G, E

Certified test reports for materials shall be submitted with all materials delivered to the site.

SD-07 Application Qualification

Application Qualification for Steel Studs; G, A

Certifications for welders and welding operations shall be submitted prior to commencing fabrication.

Certified reports for the application qualification for steel studs shall be submitted and approved prior to commencing fabrication.

1.4 FABRICATION, MATERIALS AND WORKMANSHIP REQUIREMENTS

1.4.1 Structural Fabrication

Material must be straight before being laid off or worked. If straightening is necessary it shall be done by methods that will not impair the metal. Sharp kinks or bends shall be cause for rejection of the material. Material with welds will not be accepted except where welding is

definitely specified, indicated or otherwise approved. Bends shall be made by approved dies, press brakes or bending rolls. Where heating is required, precautions shall be taken to avoid overheating the metal and it shall be allowed to cool in a manner that will not impair the original properties of the metal. Proposed flame cutting of material other than structural steel shall be subject to approval and shall be indicated on detail drawings. Shearing shall be accurate and all portions of the work shall be neatly finished. Corners shall be square and true unless otherwise shown. Re-entrant cuts shall be filleted to a minimum radius of 3/4 inch unless otherwise approved. Finished members shall be free of twists, bends and open joints. Bolts, nuts and screws shall be tight.

1.4.2 Dimensional Tolerances for Structural Work

Dimensions shall be measured by an approved calibrated steel tape of approximately the same temperature as the material being measured. The overall dimensions of an assembled structural unit shall be within the tolerances indicated on the drawings or as specified in the particular section of these specifications for the item of work. Where tolerances are not specified in other sections of these specifications or shown, an allowable variation of 1/32 inch is permissible in the overall length of component members with both ends milled and component members without milled ends shall not deviate from the dimensions shown by not more than 1/16 inch for members 30 feet or less in length and by more than 1/8 inch for members over 30 feet in length.

1.4.3 Structural Steel Fabrication

Fabrication shall be in accordance with the applicable provisions of AISC ASD Manual. Fabrication and assembly shall be done in the shop to the greatest extent possible. The fabricating plant shall be certified under the AISC FCD for Category I structural steelwork. Compression joints depending on contact bearing shall have a surface roughness not in excess of 500 micro inches as determined by ASME B46.1, and ends shall be square within the tolerances for milled ends specified in ASTM A 6/A 6M.

Structural steel may be cut by mechanically guided or hand-guided torches, provided an accurate profile with a surface that is smooth and free from cracks and notches is obtained. Surfaces and edges to be welded shall be prepared in accordance with AWS D1.1, Subsection 3.2. Where structural steel is not to be welded, chipping or grinding will not be required except as necessary to remove slag and sharp edges of mechanically guided or hand-guided cuts not exposed to view. Hand-guided cuts which are to be exposed or visible shall be chipped, ground or machined to sound metal.

1.4.4 Welding

1.4.4.1 Welding of Structural Steel

a. Welding Procedures for Structural Steel - Welding procedures for structural steel shall be prequalified as described in AWS D1.1, Subsection 5.1 or shall be qualified by tests as prescribed in AWS D1.1, Section 5. Properly documented evidence of compliance with all requirements of these specifications for previous qualification tests shall establish a welding procedure as prequalified. For welding procedures qualified by tests, the test welding and specimen testing must be witnessed and the test report document signed by the Contracting Officer. Approval of any welding procedure will not relieve the Contractor of the responsibility for producing a finished

structure meeting all requirements of these specifications. The Contractor will be directed or authorized to make any changes in previously approved welding procedures that are deemed necessary or desirable by the Contractor Officer. The Contractor shall submit a complete schedule of welding procedures for each steel structure to be welded. The schedule shall conform to the requirements specified in the provisions AWS D1.1, Sections 2, 3, 4, 7 and 9 and applicable provisions of Section 10. The schedule shall provide detailed procedure specifications and tables or diagrams showing the procedures to be used for each required joint. Welding procedures must include filler metal, preheat, interpass temperature and stress-relief heat treatment requirements. Each welding procedure shall be clearly identified as being prequalified or required to be qualified by tests. Welding procedures must show types and locations of welds designated or in the specifications to receive nondestructive examination.

b. Welding Process - Welding of structural steel shall be by an electric arc welding process using a method which excludes the atmosphere from the molten metal and shall conform to the applicable provisions of AWS D1.1, Sections 1 thru 7, 9, 10 and 11. Welding shall be such as to minimize residual stresses, distortion and shrinkage.

c. Welding Technique

(1) Filler Metal - The electrode, electrode-flux combination and grade of weld metal shall conform to the appropriate AWS specification for the base metal and welding process being used or shall be as shown where a specific choice of AWS specification allowable is required. The AWS designation of the electrodes to be used shall be included in the schedule of welding procedures. Only low hydrogen electrodes shall be used for manual shielded metal-arc welding regardless of the thickness of the steel. A controlled temperature storage oven shall be used at the job site as prescribed by AWS D1.1, Subsection 4.5 to maintain low moisture of low hydrogen electrodes.

(2) Preheat and Interpass Temperature - Preheating shall be performed as required by AWS D1.1, Subsection 4.2 and 4.3 or as otherwise specified except that the temperature of the base metal shall be at least 70 degrees F. The weldments to be preheated shall be slowly and uniformly heated by approved means to the prescribed temperature, held at that temperature until the welding is completed and then permitted to cool slowly in still air.

(3) Stress-Relief Heat Treatment - Where stress relief heat treatment is specified or shown, it shall be in accordance with the requirements of AWS D1.1, Subsection 4.4 unless otherwise authorized or directed.

d. Workmanship - Workmanship for welding shall be in accordance with AWS D1.1, Section 3 and other applicable requirements of these specifications.

(1) Preparation of Base Metal - Prior to welding the Contractor shall inspect surfaces to be welded to assure compliance with AWS D1.1, Subsection 3.2.

(2) Temporary Welds - Temporary welds required for fabrication and erection shall be made under the controlled conditions

prescribed for permanent work. Temporary welds shall be made using low-hydrogen welding electrodes and by welders qualified for permanent work as specified in these specifications. Preheating for temporary welds shall be as required by AWS D1.1 for permanent welds except that the minimum temperature shall be 120 degrees F in any case. In making temporary welds arcs shall not be struck in other than weld locations. Each temporary weld shall be removed and ground flush with adjacent surfaces after serving its purpose.

(3) Tack Welds - Tacks welds that are to be incorporated into the permanent work shall be subject to the same quality requirements as the permanent welds and shall be cleaned and thoroughly fused with permanent welds. Preheating shall be performed as specified above for temporary welds. Multiple-pass tack welds shall have cascaded ends. Defective tack welds shall be removed before permanent welding.

1.4.4.2 Welding of Steel Studs

The procedures for welding steel studs to structural steel, including mechanical, workmanship, technique, stud application qualification, production quality control and fabrication and verification inspection procedures shall conform to the requirements of AWS D1.1, Section 7, except as otherwise specified.

a. Application Qualification for Steel Studs - As a condition of approval of the stud application process, the Contractor shall furnish certified test reports and certification that the studs conform to the requirements of AWS D1.1, Subsections 7.2 and 7.3, certified results of the stud manufacturer's stud base qualification test, and certified results of the stud application qualification test as required by AWS D1.1, Subsection 7.6, except as otherwise specified.

b. Production Quality Control - Quality control for production welding of studs shall conform to the requirements of AWS D1.1, Subsection 7.7, except as otherwise specified. Studs on which pre-production testing is to be performed shall be welded in the same general position as required on production studs (flat, vertical, overhead or sloping). If the reduction of the length of studs becomes less than normal as they are welded, welding shall be stopped immediately and not resumed until the cause has been corrected.

1.4.5 Bolted Connections

1.4.5.1 Bolted Structural Steel Connections

Bolts, nuts and washers shall be of the type specified or indicated. All nuts shall be equipped with washers except for high strength bolts. Beveled washers shall be used where bearing faces have a slope of more than 1:20 with respect to a plane normal to the bolt axis. Where the use of high strength bolts is specified or indicated the materials, workmanship and installation shall conform to the applicable provisions of ASTM A 325M ASTM A 325 or ASTM A 490M. ASTM A 490.

a. Bolt Holes - Bolt holes shall be accurately located, smooth, perpendicular to the member and cylindrical.

(1) Holes for regular bolts shall be drilled or subdrilled and

reamed in the shop and shall not be more than 1/16 inch larger than the diameter of the bolt.

(2) Holes for fitted bolts shall be match-reamed or drilled in the shop. Burrs resulting from reaming shall be removed. The threads of bolts shall be entirely outside of the holes. The body diameter of bolts shall have tolerances as recommended by ASME B4.1 for the class of fit specified. Fitted bolts shall be fitted in reamed holes by selective assembly to provide an LN-2 fit.

(3) Holes for high strength bolts shall have diameters of not more than 1/16 inch larger than bolt diameters. If the thickness of the material is not greater than the diameter of the bolts the holes may be punched. If the thickness of the material is greater than the diameter of the bolts the holes may be drilled full size or subpunched or subdrilled at least 1/8 inch smaller than the diameter of the bolts and then reamed to full size. Poor matching of holes will be cause for rejection. Drifting occurring during assembly shall not distort the metal or enlarge the holes. Reaming to a larger diameter of the next standard size bolt will be allowed for slight mismatching.

1.4.6 Markings

Prior to erection, members shall be identified by a painted erection mark. Connecting parts assembled in the shop for reaming holes in field connections shall be match marked with scratch and notch marks. Do not locate erection markings on areas to be welded or on surfaces of weathering steels that will be exposed in the completed structure. Do not locate match markings in areas that will decrease member strength or cause stress concentrations.

1.4.7 Shop Primer

Shop prime structural steel, except as modified herein, in accordance with SSPC PA 1. Do not prime steel surfaces embedded in concrete, or surfaces within 0.5 inch of the toe of the welds prior to welding (except surfaces on which metal decking is to be welded). Slip critical surfaces shall be primed with a Class B coating. Prior to assembly, prime surfaces which will be concealed or inaccessible after assembly. Do not apply primer in foggy or rainy weather; when the ambient temperature is below 45 degrees F or over 95 degrees F; or when the primer may be exposed to temperatures below 40 degrees F within 48 hours after application, unless approved otherwise by the Contracting Officer.

1.4.8 Cleaning

SSPC SP 6, except steel exposed in spaces above ceilings, attic spaces, furred spaces, and chases that will be hidden to view in finished construction may be cleaned to SSPC SP 3 when recommended by the shop primer manufacturer. Maintain steel surfaces free from rust, dirt, oil, grease, and other contaminants through final assembly.

1.4.9 Primer

Apply primer to a minimum dry film thickness of 2.0 mil except provide the Class B coating for slip critical joints in accordance with the coating manufacturer's recommendations. Repair damaged primed surfaces with an additional coat of primer.

1.4.10 Detail Drawings

Detail drawings for metalwork and machine work shall include catalog cuts, templates, fabrication and assembly details and type, grade and class of material as appropriate. Elements of fabricated items inadvertently omitted on contract drawings shall be detailed by the fabricator and indicated on the detail drawings.

1.4.11 Qualification of welders and Welding Operators

The Contractor shall certify that the qualification of welders and welding operators and tack welders who will perform structural steel welding have been qualified for the particular type of work to be done in accordance with the requirements of AWS D1.1/D1.1M, Section 5 prior to commencing fabrication. The certificate shall list the qualified welders by name and shall specify the code and procedures under which qualified and the date of qualification. Prior qualification will be accepted if welders have performed satisfactory work under the code for which qualified within the preceding three months. The Contractor shall require welders to repeat the qualifying tests when their work indicates a reasonable doubt as to proficiency. Those passing the requalification tests will be recertified. Those not passing will be disqualified until passing. All expenses in connection with qualification and requalification shall be borne by the Contractor.

1.4.12 Storage

Material shall be stored out of contact with the ground in such manner and locations as will minimize deterioration.

1.5 QUALITY ASSURANCE

1.5.1 Drawing Requirements

Submit fabrication drawings for approval prior to fabrication. Prepare in accordance with AISC M013, AISC M016 and AISC M017. Drawings shall not be reproductions of contract drawings. Include complete information for the fabrication and erection of the structure's components, including the location, type, and size of bolts, welds, member sizes and lengths, connection details, blocks, copes, and cuts. Use AWS standard welding symbols. Shoring and temporary bracing shall be designed and sealed by a registered professional engineer and submitted for record purposes, with calculations, as part of the drawings.

1.5.2 Welding Procedures and Qualifications

Prior to welding, submit certification for each welder stating the type of welding and positions qualified for, the code and procedure qualified under, date qualified, and the firm and individual certifying the qualification tests. If the qualification date of the welding operator is more than one-year old, the welding operator's qualification certificate shall be accompanied by a current certificate by the welder attesting to the fact that he has been engaged in welding since the date of certification, with no break in welding service greater than 6 months.

PART 2 PRODUCTS

2.1 MISCELLANEOUS METALS AND STANDARD METAL ARTICLES

Miscellaneous metal materials and standard metal articles shall conform to the respective specifications and other designated requirements. Sizes shall be as specified or shown. Where material requirements are not specified, materials furnished shall be suitable for the intended use and shall be subject to approval.

2.1.1 Structural Steel

ASTM A 36/A 36M, ASTM A 572/A 572M Grade 30, ASTM A 588/A 588M, Grade 50, ASTM A 252, Grade 50

2.1.2 Steel Plates

2.1.2.1 Structural

ASTM A 514/A 514M, Grade 50.

2.1.3 Bolts, Nuts, Beveled Washers, Shear Studs, Anchor Bolts and Threaded Rods

Bolts, nuts, and washers shall be of the material, grade, type, class, style and finish indicated or best suited for intended use.

2.1.3.1 High-Strength Bolts, Nuts, Washers, Beveled Washers, Shear Studs, Anchor Bolts and Threaded Rods

ASTM A 325/A 325M, or ASTM A 490/A 490M.

2.1.3.2 Screws

Screws shall be of the material, grade, type, style, and finish indicated or best suited for use intended.

2.1.3.3 Cap Screws

ASME B18.2.1, ASME B18.3, or ASME B18.6.2 as required.

2.1.3.4 Machine Screws

ASME B18.6.3.

2.1.3.5 Wood Screws

ASME B18.6.1.

2.2 SHOP FABRICATED METAL ITEMS

Shop fabricated metal items shall conform to the requirements and details as specified or shown and to the workmanship provisions and other applicable fabrication requirements as specified.

2.2.1 Steel Connector sheet Piles for Caissons

Steel connector piles shall be of the type specified and shown and shall be furnished and installed complete with all fittings, brackets, fasteners,

sleeves, anchors, and other appurtenances as shown and as required for proper installation.

2.3 STRUCTURAL STEEL ACCESSORIES

2.3.1 Welded Shear Stud Connectors

AWS D1.1/D1.1M.

2.4 SHOP PRIMER

SSPC Paint 25, (alkyd primer) or SSPC PS 13.01 epoxy-polyamide, green primer (Form 150) type 1, except provide a Class B coating in accordance with AISC M016 and AISC M017 for slip critical joints. Primer shall conform to Federal, State, and local VOC regulations. If flash rusting occurs, re-clean the surface prior to application of primer.

PART 3 EXECUTION

3.1 INSTALLATION

All parts to be installed shall be thoroughly cleaned. Packing compounds, rust, dirt, grit and other foreign matter shall be removed. Holes and grooves for lubrication shall be cleaned. Enclosed chambers or passages shall be examined to make sure that they are free from damaging materials. Where units or items are shipped as assemblies they will be inspected prior to installation. Disassembly, cleaning and lubrication will not be required except where necessary to place the assembly in a clean and properly lubricated condition. Pipe wrenches, cold chisels or other tools likely to cause damage to the surfaces of rods, nuts or other parts shall not be used for assembling and tightening parts. Bolts and screws shall be tightened firmly and uniformly but care shall be taken not to overstress the threads. When a half nut is used for locking a full nut the half nut shall be placed first and followed by the full nut. Threads of all bolts except high strength bolts, nuts and screws shall be lubricated with an approved lubricant before assembly. Threads of corrosion-resisting steel bolts and nuts shall be coated with an approved antigalling compound. Driving and drifting bolts or keys will not be permitted.

3.1.1 Alignment and Setting

Each machinery or structural unit shall be accurately aligned by the use of steel shims or other approved methods so that no binding in any moving parts or distortion of any member occurs before it is fastened in place. The alignment of all parts with respect to each other shall be true within the respective tolerances required. Machines shall be set true to the elevations shown.

3.1.2 Connections

Except as modified in this section, connections not detailed shall be designed in accordance with AISC S335 or AISC S342L. Build connections into existing work. Do not tighten anchor bolts set in concrete with impact torque wrenches. Punch, subpunch and ream, or drill bolt [and pin] holes. Bolts, nuts, and washers shall be clean of dirt and rust, and lubricated immediately prior to installation.

3.1.2.1 Snug Tight Bolts

"Snug tight" is the tightness that exists when plies in a joint are in firm contact. If firm contact of joint plies cannot be obtained with a few impacts of an impact wrench, or the full effort of a man using a spud wrench, contact the Contracting Officer for further instructions.

3.2 TESTS, INSPECTIONS, AND VERIFICATIONS

The Contractor shall have required material tests and analyses performed and certified by an approved laboratory to demonstrate that materials are in conformity with the specifications. These tests and analyses shall be performed and certified at the Contractor's expense. Tests, inspections, and verifications shall conform to the requirements of the particular sections of these specifications for the respective items of work unless otherwise specified or authorized. Tests shall be conducted in the presence of the Contracting Officer if so required. The Contractor shall furnish specimens and samples for additional independent tests and analyses upon request by the Contracting Officer. Specimens and samples shall be properly labeled and prepared for shipment.

3.2.1 Workmanship

Workmanship shall be of the highest grade and in accordance with the best modern practices to conform with the specifications for the item of work being furnished.

3.2.2 Nondestructive Testing

When doubt exists as to the soundness of any material part such part may be subjected to any form of nondestructive testing determined by the Contracting Officer. This may include ultrasonic, magnaflux, dye penetrant, x-ray, gamma ray or any other test that will thoroughly investigate the part in question. The cost of such investigation will be borne by the Government. Any defects will be cause for rejection and rejected parts shall be replaced and retested at the Contractor's expense.

3.2.2.1 Inspection of Structural Steel Welding

The Contractor shall maintain an approved inspection system and perform required inspections in accordance with Contract Clause CONTRACTOR INSPECTION SYSTEM. Welding shall be subject to inspection to determine conformance with the requirements of AWS D1.1, the approved welding procedures and provisions stated in other sections of these specifications. Nondestructive examination of designated welds will be required. Supplemental examination of any joint or coupon cut from any location in any joint may be required.

3.2.2.2 Visual Examination

All visual examination of completed welds shall be cleaned and carefully examined for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement and other surface defects to ensure compliance with the requirements of AWS D1.1, Section 3 and Section 9, Part D.

3.2.2.3 Test Coupons

The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to soundness cannot be resolved by nondestructive examination. Should tests of any two coupons cut from

the work of any welder show strengths less than that specified for the base metal it will be considered evidence of negligence or incompetence and such welder shall be removed from the work. When coupons are removed from any part of a structure the members cut shall be repaired in a neat manner with joints of the proper type to develop the full strength of the members. Repaired joints shall be peened as approved or directed to relieve residual stress. The expense for removing and testing coupons, repairing cut members and the nondestructive examination of repairs shall be borne by the Government or the Contractor in accordance with the Contract Clauses INSPECTION AND ACCEPTANCE.

3.2.2.4 Supplemental Examination

When the soundness of any weld is suspected of being deficient due to faulty welding or stresses that might occur during shipment or erection the Government reserves the right to perform nondestructive supplemental examinations before final acceptance. The cost of such inspection will be borne by the Government.

3.2.3 Structural Steel Welding Repairs

Defective welds in the structural steel welding repairs shall be repaired in accordance with AWS D1.1, Subsection 3.7. Defective weld metal shall be removed to sound metal by use of air carbon-arc or oxygen gouging. Oxygen gouging shall not be used on ASTM A 514/A 514M steel. The surfaces shall be thoroughly cleaned before welding. Welds that have been repaired shall be retested by the same methods used in the original inspection. Except for the repair of members cut to remove test coupons and found to have acceptable welds costs of repairs and retesting shall be borne by the Contractor.

3.2.4 Inspection and Testing of Steel Stud Welding

Fabrication and verification inspection and testing of steel stud welding shall conform to the requirements of AWS D1.1, Subsection 7.8 except as otherwise specified. The Contracting Officer will serve as the verification inspector. One stud in every 100 and studs that do not show a full 360 degree weld flash, have been repaired by welding or whose reduction in length due to welding is less than normal shall be bent or torque tested as required by AWS D1.1, Subsection 7.8. If any of these studs fail two additional studs shall be bent or torque tested. If either of the two additional studs fail all of the studs represented by the tests shall be rejected. Studs that crack under testing in either the weld, base metal or shank shall be rejected and replaced by the Contractor at no additional cost.

-- End of Section --

SECTION 06100A

ROUGH CARPENTRY
02/02

PAYMENT ITEM NO. 0008 TIMBER CURB

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN FOREST & PAPER ASSOCIATION (AF&PA)

AF&PA T101	(1991; Supple 1993; Addenda Apr 1997; Supple T02) National Design Specification for Wood Construction

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 307	(2000) Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
ASTM F 547	(1977; R 1995) Definitions of Terms Relating to Nails for Use with Wood and Wood-Based Materials

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

AWPA C2	(2000) Lumber, Timber, Bridge Ties and Mine Ties - Preservative Treatment by Pressure Processes
AWPA C20	(1999) Structural Lumber Fire-Retardant Pressure Treatment
AWPA M4	(1999) Standard for the Care of Preservative-Treated Wood Products
AWPA P5	(2000) Standards for Waterborne Preservatives

NATIONAL HARDWOOD LUMBER ASSOCIATION (NHLA)

NHLA Rules	(1994) Rules for the Measurement & Inspection of Hardwood & Cypress

NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION (NELMA)

NELMA Grading Rules	(1997) Standard Grading Rules for Northeastern Lumber

REDWOOD INSPECTION SERVICE (RIS)

RIS GCRL (1997) Grades of California Redwood Lumber

SOUTHERN CYPRESS MANUFACTURERS ASSOCIATION (SCMA)

SCMA Spec (1986; Supple No. 1, Aug 1993) Standard Specifications for Grades of Southern Cypress

SOUTHERN PINE INSPECTION BUREAU (SPIB)

SPIB Rules (1994; Supple 8 thru 11) Standard Grading Rules for Southern Pine Lumber

WEST COAST LUMBER INSPECTION BUREAU (WCLIB)

WCLIB 17 (1996; Supp. VII & VIII) Standard Grading and Dressing Rules for Douglas Fir, Western Hemlock, Western Red Cedar, White Fir, Sitka Spruce Lumber

WESTERN WOOD PRODUCTS ASSOCIATION (WWPA)

WWPA Grading Rules (1999) Western Lumber Grading Rules 95

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Timber Curb; G, E

Drawings of field erection details, including materials and methods of fastening nailers in conformance with Factory Mutual wind uplift rated systems specified in other Sections of these specifications.

SD-07 Certificates

Grading and Marking; G, A

Manufacturer's certificates (approved by an American Lumber Standards approved agency) attesting that lumber and material not normally grade marked meet the specified requirements. Certificate of Inspection for grade marked material by an American Lumber Standards Committee (ALSC) recognized inspection agency prior to shipment.

1.3 DELIVERY AND STORAGE

Materials shall be delivered to the site in undamaged condition, stored off ground in fully covered, well ventilated areas, and protected from extreme changes in temperature and humidity.

1.4 UNIT PRICES - TIMBER CURBS

1.4.1 Payment

All costs associated with furnishing, delivering, cutting, machining and installation of timber curbs.

1.4.2 Measurement

Timber curbs will be measured for payment on the basis of actual linear feet of timber curbs as indicated on the drawings. No deductions will be made for drilled holes or other machining.

PART 2 PRODUCTS

2.1 LUMBER

2.1.1 Grading and Marking

2.1.1.1 Lumber Products

Solid sawn and finger-jointed lumber shall bear an authorized grade stamp or grademark recognized by ALSC, or an ALSC recognized certification stamp, mark, or hammerbrand. Surfaces that are to be exposed to view shall not bear grademarks, stamps, or any type of identifying mark. Hammer marking will be permitted on timbers when all surfaces will be exposed to view.

2.1.2 Sizes

Lumber and material sizes shall conform to requirements of the rules or standards under which produced. Unless otherwise specified, lumber shall be surfaced on four sides. Unless otherwise specified, sizes indicated are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which the product is produced.

2.1.3 Treatment

Exposed areas of treated wood that are cut or drilled after treatment shall receive a field treatment in accordance with AWPA M4. Items of all-heart material of cedar, cypress, or redwood will not require preservative treatment, except when in direct contact with soil. Except as specified for all-heart material of the previously mentioned species, the following items shall be treated:

a. Wood members in contact with or within 18 inches of soil.

b. Wood members in contact with water.

c. Wood members exposed to the weather.

d. Wood members set into concrete regardless of location.

e. Wood members in contact with concrete that is in contact with soil or water or that is exposed to weather.

2.1.3.1 Lumber and Timbers

Lumber and timbers shall be treated in accordance with AWPA C2 with waterborne preservatives listed in AWPA P5 to a retention level as follows:

a. 0.25 pcf intended for above ground use.

2.1.4 Moisture Content

At the time lumber and other materials are delivered and when installed in the work their moisture content shall be as follows:

a. Treated and Untreated Lumber: 4 inches or less, nominal thickness, 19 percent maximum. 5 inches or more, nominal thickness, 23 percent maximum in a 3 inch perimeter of the timber cross-section.

b. Materials Other Than Lumber: In accordance with standard under which product is produced.

2.1.5 Miscellaneous Wood Members

2.1.5.1 Wood Bumpers

Bumpers shall be of the species and grade in accordance with TABLE II at the end of this section, size as shown on the drawings.

2.2 ACCESSORIES AND NAILS

Markings shall identify both the strength grade and the manufacturer. Accessories and nails shall conform to the following:

2.2.1 Anchor Bolts

ASTM A 307, size as indicated, complete with nuts and washers.

2.2.2 Bolts: Lag, Toggle, and Miscellaneous Bolts and Screws

Type, size, and finish best suited for intended use. Finish options include zinc compounds, cadmium, and aluminum paint impregnated finishes.

PART 3 EXECUTION

3.1 INSTALLATION OF WOOD BUMPERS

Wood bumpers shall be bored, countersunk and machined as shown or indicated on the drawings and securely bolted in place.

3.2 TABLES

TABLE II. ACCEPTABLE SPECIES AND GRADE

Wood Bumpers

Grading Rules	Species	No. 1	No. 2
SPIB Rules			
	Southern Pine	X	
WCLIB 17			
	Douglas Fir-Larch		X
	Hem-Fir		X
WWPA Grading Rules			
	Douglas Fir-Larch		X
	Hem-Fir		X
	Douglas Fir-South		X

-- End of Section --

SECTION 09805

SHEET PILE AND CAISSON COATING

PAYMENT ITEM NO. 0020 CORROSION PROTECTION COATING OF BULKHEAD

PART 1 GENERAL

1.1 RELATED WORK

Related work is described in the following sections of the specification:

A. Section 02464A METAL SHEET PILING

B. Section 05055A MISCELLANEOUS STEEL, STRUCTURAL STEEL, STANDARD ARTICLES, SHOP-FABRICATED ITEMS, METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS

C. Section 13110A CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE) Protection

1.2 WORK INCLUDED

Work of this section includes all labor, materials, equipment and services necessary to furnish and install the epoxy coatings system for the steel sheet piles and caissons as indicated on the Contract Drawings and as specified herein. The work shall include but not be limited to:

A. Cleaning and preparing sheet piles and caissons as required for coating applications.

B. Applying two coats of the epoxy coating system.

C. Testing and inspection of coating by an approved independent testing agency retained by the Contractor.

D. Field touch-up application of coatings as required.

1.3 MEASUREMENT PAYMENT

1.3.1 Payment

Payment will be made for costs associated with Section 09805 SHEET PILE AND CAISSON COATING , which includes full compensation for furnishing all materials, equipment, and labor required to coat the sheet piles and caissons in accordance with this section.

1.3.2 Measurement

Unit of measurement: square foot.

1.4 REFERENCES

The application and testing of coatings shall comply with the applicable sections of Local and Federal codes, ordinances and regulations having

jurisdiction over the work, the manufacturer's recommendations and the Structural Steel Painting Council (SSPC) standards:

A. SSPC-SP-5 White Metal Blast Cleaning

B. SSPC-PA 2 Measurement of Dry Paint Thickness with Magnetic Gages

1.5 SUBMITTALS

The Contractor shall submit to the Contracting Officer for review and approval the following:

SD-07 Certificates

Testing Laboratory; G, A

Name of independent testing laboratory that the contractor proposes to retain to inspect the blast cleaning of pile and caissons and coating thickness.

Coating System; G, A

Type of coating system to be used in the field for making field touch-up of coating.

Material Compliance; G, A

Certificates that all the materials supplied comply with the Contract Documents.

Pile Cleaning; G, A

Written reports by the independent testing agency that the piles and caissons have been cleaned in accordance with the specified procedures and coatings have been applied to the specified thicknesses.

1.6 QUALITY ASSURANCE

The Contractor shall retain an independent testing agency, approved by the Contracting Officer, to inspect the coating procedure as follows:

A. Verify that the steel piles and caissons have been prepared for coating in accordance with the coating manufacturer's recommendations and the requirements of the Specifications.

B. Verify the thicknesses of the epoxy coating and that it is being applied in accordance with the coating manufacturer's recommendations to the dry film thicknesses specified.

1.7 PRODUCT HANDLING AND STORAGE

Store, handle and place coated material in a manner that will minimize damage to coating and will not reduce its effective protective value. Repair damaged surfaces as recommended by the coating manufacturer.

PART 2 PRODUCTS

2.1 MATERIALS

A. Coatings

1. Coating System shall be two-component, self priming, coal tar epoxy for metal recommended by the manufacturer for protection in immersion service in salt solutions and fresh water and underground service.

2. VOC content (unthinned) shall be not more than 265 grams/liter.

3. Minimum DFT shall be 10 mils per coat.

PART 3 EXECUTION

3.1 CLEANING AND SURFACE PREPARATION

A. All steel surfaces to be coated shall be blast cleaned in preparation for application of the coating. The blast cleaning shall extend at least 50 mm beyond the zone to be coated. Blast cleaning shall be continuous over all portions of the bare surface. Blast cleaning shall be white metal as defined by SSPC-SP-5.

B. All surfaces to be coated must be completely dry, free of moisture, soil, dust and grit at the time the coating is applied.

3.2 APPLICATION

A. Coating shall be applied in accordance with the manufacturer's recommendations.

B. The coal tar epoxy shall be applied in two coats to a dry film thickness of approximately 10 mils each coat. The completed coating shall have a minimum dry film thickness of 20 mils.

C. The first coat of the coal tar epoxy shall be applied and allowed to dry, in accordance with the manufacturer's recommendations before applying the second coat. If the first coat has cured beyond the manufacturer's recommended recoat time, the surface shall be lightly wire brushed and wiped with methyl isobutyl ketone before applying the second coat.

D. Coating shall be applied and cured within temperature ranges recommended by the manufacturer.

E. The finished coating shall be generally smooth, glossy, and free of protuberances. A minor amount of sags, dimpling or curtaining, not to exceed 3 percent of surface is permitted unless they present sharp edges which may cause remove against sharp objects when driving.

F. Test for continuity of coating with a holiday tester of 100 volts or less and repair all holidays detected to meet such test.

G. Nylon slings shall be used to handle coated sections during shipment and delivery to site.

H. Where welding or fastenings are to be accomplished after installation of the piles, field applied protective coats shall be made after same is completed.

I. The complete coating system shall be allowed to cure for a minimum of eight days prior to the installation of the piles and caissons.

3.3 TESTING

The Contractor's approved inspection and testing agency shall be responsible for quality control checking, including visual inspection and coating thickness measurements. Coating thickness shall be tested in accordance with SSPC-PA 2 requirements. The Contractor shall keep and provide records of the results of all inspections in a form suitable to the Contracting Officer.

3.4 FIELD TOUCH-UP

A. A compatible touch up system shall be provided for repair of coating defects, in accordance with the coating manufacturer's recommendations and as approved by the Contracting Officer.

B. Before driving, touch up all abraded surfaces in the coating and clean and touch up all field welds and fastenings, in accordance with the coating manufacturer's recommendations and as approved by the Contracting Officer.

-- End of Section --

SECTION 13110A

CATHODIC PROTECTION BY GALVANIC ANODES

PAYMENT ITEM NO. 0021 CATHODIC PROTECTION OF BULKHEAD

PART 1 GENERAL

1.1 RELATED WORK

Related work is described in the following sections of the specification:

A. Section 02464a METAL SHEET PILING
B. Section 05055A MISCELLANEOUS STEEL, STRUCTURAL STEEL, STANDARD ARTICLES, SHOP-FABRICATED ITEMS, METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS
C. Section 09805 SHEET PILE AND CAISSON COATING

1.2 WORK INCLUDED

Work of this section includes all labor, materials, equipment and services necessary to furnish and install the cathodic protection system for the steel sheet piles and caissons as indicated on the Contract Drawings and as specified herein. The work shall include but not be limited to:

A. Furnishing and installing galvanic anodes by welding onto the sheet pile
B. Electrical bonding of sheet pile by welding rebar across joints
C. Testing the completed cathodic protection system.

1.3 MEASUREMENT PAYMENT

1.3.1 Payment

Payment will be made for costs associated with Section 13110 CATHODIC PROTECTION BY GALVANIC ANODES, which includes full compensation for furnishing all materials, equipment, and labor required to install cathodic protection by galvanic anodes in accordance with this section and on the drawings as indicated.

1.3.2 Measurement

Measurement: lump sum.

1.4 REFERENCES

The application and testing of anodes shall comply with the applicable sections of Local and Federal codes, ordinances and regulations having jurisdiction over the work, the manufacturer's recommendations and the National Associate of Corrosion Engineers (NACE) standards:

NACE RP 0169, Control of External Corrosion on Underground or Submerged Metallic Piping Systems

1.5 SUBMITTALS

The Contractor shall submit to the Contracting Officer for review and approval the following:

SD-04 Samples

Catalog Cut Sheets; G, A.

Catalog cut sheets for anodes to be used.

SD-07 Certificates

Material Compliance; G, A

Certificates that all the materials supplied comply with the Contract Documents.

SD-06 Test Reports

Test Reports; G, A

Written reports detailing results of cathodic protection tests.

1.6 PRODUCT HANDLING AND STORAGE

Store, handle and place coated material in a manner that will minimize damage to anodes.

PART 2 PRODUCTS

2.1 MATERIALS

A. Aluminum Anodes

Chemical composition as follows:

Iron	0.10% max
Copper	0.006% max
Silicon	0.20% max
Zinc	2.8-3.5%
Indium	0.02% max
Aluminum	Remainder

B. Anode Weight shall be 30 pounds, nominal. Anode ingot dimensions shall be 3" by 3" by 36", nominal.

C. Anode Core shall be ½" steel rod, minimum. Rod shall be bent and cast in such a manner as to provide a minimum space of 2" between the aluminum ingot and the sheet pile.

D. Anodes shall be attached in locations shown on Contract Drawings.

E. Bonding bars shall be #5 reinforcing rod. Bars shall be installed via welding as shown on contract drawings. The intent of bonding is to make the entire wall one continuous electrical structure. Therefore, each pile section should be bonded to the adjacent section, or the adjacent caisson via a welded joint. Sheet pile connections welded along length of caissons do not require an additional bond via reinforcing rod.

PART 3 EXECUTION

3.1 CLEANING AND SURFACE PREPARATION

All steel surfaces where welding is to occur shall be cleaned in accordance with SSPC SP-11 (Power Tool Cleaning to Bare Metal) and welds shall be completed before rust back occurs.

3.2 TOUCH UP

A. Areas where sheet pile or caisson coating have been removed or damaged shall be repaired in accordance with Section 09805.

B. Aluminum anode ingot surfaces shall NOT be coated. Anode mounting rods do not need to be coated beyond the heat-affected zone of the mounting weld.

3.3 TESTING

The Contractor's shall be responsible for cathodic protection system testing. The cathodic protection testing shall be performed by an individual who has been certified by NACE as a Corrosion Technician at a minimum. Testing shall be performed in the presence of the Engineer. The Contractor shall keep and provide records of the results of all inspections in a form suitable to the Engineer. Contractor shall correct and retest, at his expense, deficiencies in the materials and installation observed by these tests and inspections. Testing shall include the following measurements:

3.4 TEST EQUIPMENT

Test equipment shall have been calibrated by an independent agency within one year of use for this Work.

Voltmeter, D.C: Center zero, analog, minimum input impedance of 50,000 ohms/volt, accurate to within 2% full scale. Full scale response time shall be no more than 0.5 second. Full scale ranges: 0?10 mV, 0?100 mV, 0?1 V, 0?10 V, 0?100 V.

Reference Cell: Portable silver-silver chloride reference cell suitable for immersion service in brackish water complete with suitable test lead and waterproof connector.

3.5 NATIVE POTENTIALS

At least one week after the installation of the structure to be protected, and before the installation of the anodes, measure the native (base) structure-to-electrolyte potentials. Perform measurements at intervals along the wall of approximately five feet. Measure the potential between the wall and a portable reference cell placed at the water surface, and at intervals of 3' from the water surface to the mud line. The locations of these measurements shall be identical to those used in Protected Potentials, below. All measurements shall be taken within 2 hours of high tide.

3.6 PROTECTED POTENTIAL

With the galvanic anodes in place for a minimum of 2 weeks, measure structure-to-electrolyte potentials at the same locations as Native

Potentials, above.

3.7 CRITERIA FOR CATHODIC PROTECTION

The system shall be considered acceptable if either of the following criterion are met:

1. A negative voltage of at least 0.90 volts as measured between the structure and a saturated silver-silver chloride electrode at all test locations.

2. A minimum polarization voltage shift of 100 millivolts. This voltage shift shall be determined by subtracting the Native Potential from the Protected Potential. The criteria must be met at all test locations for the system to be acceptable.

-- End of Section --